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All Branches of Paper Industry Optimistic

Revival of Good Spirits and Feeling of Confidence Generally Experienced In Philadelphia Paper Market—Opinion Practically Universal That Local Trade Is Co-Operating Better Now Than Probably Ever Before—Six Organizations Now Working Toward Betterment of Conditions for Manufacturers and Merchants

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 18, 1933—Not since the closing months of last year has there been such a feeling of confidence and such a revival of good spirit in all branches of the paper trade in Philadelphia as was plentifully in evidence during the past week. It is not to be assumed that actual business has been jumped forward with a great leap. But it is an absolute fact that the overwhelming majority of opinions of the realists in the trade is that the turning point was passed and that there now exists a virtual certainty of improvement—indeed some of it already has been enjoyed.

There are, of course, in the trades optimists who see nothing ahead but a rosy path of prosperity, and there are pessimists—but their number is rather small—who say that since so frequently in the past they have been told that all the darkness was over, only to find that they were disappointed, that now they do not see enough to convince them that the real thing at last has arrived. But this opinion is absolutely universal—that the trade, through stress and adversity is standing together, shoulder to shoulder, better now than probably ever in its history.

Association Activities Expand

Your correspondent can recall from personal experience of more than two decades ago the extreme difficulties and the discouragements he encountered in efforts made to organize; efforts which successfully terminated with the organization of the Paper Trade Association of Philadelphia by the active cooperation in the organization movement of the late Charles L. Huff. What a contrast with today! With the accession this week of a new association in the paper trade, there are perhaps six organizations actively at work toward betterment of conditions, not alone for themselves, but quite as much for the mills on the one hand, and their customers on the other.

In the line of such organization, the week brought two outstanding developments. Because of critical conditions, credit men representing all the paper houses in this city having departments for the supply of Materials to the paper box manufacturers, met in the Bourse and laid the preliminary foundations for an organization, and hope to perfect these at a meeting to be held two weeks hence. While the paper box trade has, of course, not been in a prosperous condition for a long while, the recent failure of a concern which hitherto had had the highest rating, and whose crash came most unexpectedly, was the immediate cause for an organization.

It is reported among the credit men that all had given this firm virtually unlimited credit but that failure and Sheriff sale occurred so quickly as to astound. Thus far the paper box supply house credit men have only had informal contact with each other, but there is now in prospect a real organization, impelled, of course, by the stress of the times, but which probably will be of a permanent character.

Paper and Cordage Association Meets

The other notable development of the week was the meeting of the Philadelphia Paper and Cordage Association, Inc., which for the first time since it went to sleep a little more than two years ago, unfurled its 12x14 foot banner on Chestnut street—principal business thoroughfare of the city—from the Hotel Adelphia, where the association henceforth will make its headquarters. There were in attendance eighteen representatives of seventeen jobbing houses in this city, representing practically all who specialize in coarse papers and cordage. It will be recalled that the function of this association while largely social, is by making salesmen better acquainted with each other and opening the doors to all who desire to attend, to give each opportunity of understanding the other fellow's point of view and to that extent of eliminating the unfair competition which has been disastrous.

Addresses of an informal character were made by Ralph E. Davis, of the Ajax Division of the United States Envelope Company; President George K. Hooper, Hooper Paper and Twine Company; W. C. Mansfield, Union Bag and Paper Company, and Mr. Schroeder, of the Pjepscot Paper Company. The addresses were similar in character in that they emphasized the importance not of combination for advancement of prices but of the elimination of cutthroat competition and of unfair methods, beneficial perhaps immediately to a few consumers but eventually harmful not only to the jobbing houses but to the consumers as well. At this meeting there was virtually completed the membership drive with the result that it now consists of the following: F. I. Brower; L. C. Bartlett, Eastern Paper Company; Geo. K. Hooper, Hooper Paper and Twine

(Continued on page 18)

Chicago Paper Market Displays Better Sentiment

Genuine Improvement Reported In Book Paper Division—Sulphite Bond Situation Becoming More Stable—Some Improvement Noticed In Kraft Wrapping Paper Section — Paper Board Industry Continues Steady—Paper Stock Moderately Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 20, 1933—Sentiment in Chicago paper circles is favorably different now as compared with last week as were conditions in 1929 as compared with the present time. Revived confidence and improvement in all lines of business has reflected favorably on the paper industry. While no actual shooting up of prices is reported yet the entire market seems to have stiffened materially. There are now far more executives who feel that the worst is over than there were pessimists who thought the end of the world was coming a few short days ago.

The book market continues to supply plenty of rumors of genuine improvement and cooperative efforts to improve the book situation seem to have been somewhat effective. The sulphite bond group met in Chicago last week and discussed the market situation, a session which should aid in straightening out the sulphite market to an appreciable extent. Fine papers had an exceptionally good week of it, in comparison with past weeks, orders coming in with greater regularity and for greater quantities. Ground wood representatives reported better demand and consequent firming of prices. Paper board continued to show strength. Books and covers held firm. The kraft market was in a more optimistic frame of mind and slightly better prices were reported due to the general improvement in general business sentiment.

While it seems to be true that most of the improvement is largely mental, paper houses feel that there now is a sufficient basis for an actual run up of prices to some place near the genuine profit figure. The fact that prices are far below par; that inventories are markedly low and that confidence is returning to open up consumer pocketbooks all seem to conspire to make for betterment. Even the waste material market was slightly more active during the week, according to reports.

Paper Day Planned for World's Fair

While revived business has been instrumental in sending actual orders, checks and requests for information into the offices of the Paper Foundation, Inc., Phil Howard, the president of the Foundation, is laying plans for two unusual features which will add materially to interest in the individual paper exhibit units and to the big general display of paper and paper products which will hold the spotlight of attention, as far as paper is concerned, during the Century of Progress Exposition in Chicago.

The Foundation is making arrangements for a Paper Day which, even at this stage of development, looks like one of the biggest and most important events in paper industry history. The "Day" has been promised by the Century of Progress officials and will be similar to "Steel Day"; "Electrical Day" and the other twelve hour programs designed for the more important industries. That paper is able to secure such a program is ample recognition of its position in the front ranks of all industry. The Century of Progress will throw its entire publicity forces behind Paper Day. It will be held probably sometime in September, when the weather has a better than even chance of being good.

The lateness of the Paper Day date is necessitated because of another smashing program designed by the Foundation, a contest arrangement to interest paper salesmen, jobbers, manufacturers and convertors and to last throughout June, July and August. The big honors for successful campaigns, etc., will be thrust upon the winning salesmen and their organizations at the Paper Day event.

It is also possible that the Foundation will cooperate with the Century of Progress in honoring the Illinois waterway development, inasmuch as one of the items in the cargo around which activities will center will be paper.

News of the Trade

The sulphite bond division of the Writing Paper Manufacturers Association held an important meeting at the Drake Hotel, Chicago, on March 15. The meeting was originally set for the preceding week but was postponed because of the moratorium. Forty executives were in attendance at the session; meeting under the direction of Emmett Naylor, secretary, and discussing the market situation. Reaction of the market to the marked improvement in business sentiment was one of the chief topics of discussion.

The Swigart Paper Company, Chicago, has announced an important addition to its sales staff in Felix Pagenstecher, who was, for many years, president and manager of the Bryant Paper Company, of Kalamazoo, Mich., and more recently president of the Hawley Pulp and Paper Company, of Portland, Oregon. Mr. Pagenstecher, a native Chicagoan, will specialize in the selling of book papers, giving much of his attention to the development of the recently added Champion Coated Paper Company lines.

The Chicago offices of the Albemarle Paper Company, under the direction of Jack Burrus, are being moved this week from Room 1110 in the Conway Building to Room 1148. The new location gives plenty of space to take care of not only Mr. Burrus but also of Ed Schaeffer, western representative of the Missisquoi Corporation, and Miss Mary E. Davidson, formerly with the Chicago office of the Tarentum Paper Mills. The Tarentum Chicago office is now closed. The new location keeps Jack Burrus still in close touch with the other three members of the daily "Aces Pay Double" club.

More recent information from the Paper Mills Company offices bears out the report that the veteran Chicago concern is not in receivership, but is simply liquidating completely. A skeleton warehouse and office force and some salesmen are working under the direction of Forrest Hopkins to complete the liquidation of this company which has been an important factor in Chicago and Middle West paper affairs since 1895, when the company was first organized. The date of the completion of the liquidation and the future plans of Mr. Hopkins are not as yet known, according to reports.

A number of Chicago members of the Paperboard Industries Association will be leaving soon for the meetings of the association to be held at the Commodore Hotel, New York, March 23. There are to be two sessions, an independent group session in the morning and an open group session in the afternoon. The former will be attended by manufacturers of containers without mill connections and mills without container connections. Nonmember executives are receiving a special invitation to attend the one day program. Container manufacturers, especially, will hear a great deal about their industry in-

cluding an open discussion regarding "Container Conversion Costs."

Chicago was much interested in a local news report that two Soviet engineers had perfected a film made of paper and said to be far superior in all respects to the celluloid product, particularly for sound moving pictures. Exhaustive tests are said to have proved it is incombustible, does not break, and produces a better sound. The Soviet engineers claim the new film is invaluable for broadcasting, as it may be used 3600 times.

According to George Birkenstein, head of the Waste Paper Material Dealers Association, no date has as yet been set to take care ot the annual meeting of the association which was scheduled for last week, March 13, at the Hotel Sherman, Chicago. The date will be announced in the near future.

In sending out the revised price list on Warren papers, effective March 14, the Swigart Paper Company also takes occasion to announce a new portfolio of Gold Stripe, Silver Circle, Purple Crest, Black Dot and Blue Shield papers. The Gold Stripe line includes coated cover, folding enamel, superfine enamel, dull coated and Garamond text; the Silver Circle, Folding Enamel and Dull coated folding; the Purple Crest, Folding enamel, offset, egg shell, English finish and super; the Black Dot, folding enamel and the Blue Shield, Enamel in E. F. and Super.

Society of the Genesee Honors Edward Bausch

One of America's best known organizations bestowed its signal honor upon Edward Bausch this year.

The Society of the Genesee is an organization of notable citizens who have been identified with the Genesee Valley, and who meet each year to perpetuate its fine traditions and renew friendships.

Every year this organization honors some neighbor who has won distinction and added glory to the Genesee Country. On January 23rd Mr. Bausch's name was placed on the long list of distinguished national figures who have been so honored.

Edward Bausch is the oldest son of the founder of the Bausch & Lomb Optical Company. He is now president. His entire life has been devoted to the optical business—thinking and working, inventing and developing. Over thirty patents have been granted to him and he has assisted in the development of thousands of products.

Fifty years ago, in the days when a microscope cost thousands of dollars, Edward Bausch dreamed of quantity production to attain a low price. He realized his dream. Thus, all science is indebted to him for devising means of producing microscopes that colleges, doctors and research workers could afford to buy. His idealism has been a mighty factor in building the great Bausch & Lomb plant on the banks of the Genesee River at Rochester.

Monroe Paper Products Co. Wins Suit

[FROM OUR REGULAR CORRESPONDENT]

MONROE, Mich., March 20, 1933—Sale of $75,700 worth of bonds and $28,000 worth of accounts of the Monroe Paper Products Company by the National Guardian Bank of Commerce of Detroit to the Consolidated Paper Company of Monroe for $46,500, was ruled illegal Saturday by Circuit Judge Guy A. Miller of Detroit.

The Paper Products Company had protested the sale and sought the return of the bonds and accounts which it had posted as collateral for a loan of $45,000. Judge Miller ruled that there was evidence of conspiracy and unfair competition in the purchase of the collateral by the Consolidated Paper Co.

Boston Paper Market Conditions

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 20, 1933—The general feeling in the wholesale paper trade improved last week. As a result of the bank holidays, delay in the payment of checks on the part of banks in various parts of the country which had not opened made collections still difficult, but there was a return of confidence among both fine paper and wrapping dealers. Although manufacturers have withdrawn prices on papers, there was a stronger tone to the market. Discussing prices, a dealer said "people are going to get a nickel back for a nickel put in."

Sales were infrequent, but it felt that eventually they will be more numerous and in larger volume. Demand for box board for cartons was not very brisk, and the call for material for the manufacture of jig-saw puzzles was lessened. On the other hand, there was considerable activity in some quarters. At least one board mill operated full time last week and it is expected that it will the coming week. Business in box coverings was fair, considering the circumstances.

The moratorium retarded business in paper stock, few buyers making purchases. Values appear stronger, however, as in other commodities. A number of prices advanced. In old papers, No. 1 kraft advanced from .70 @ .80 to .75 @ .85 and No. 1 mixed papers from .12½ @ .15 to .15 @ .17½. Bagging values also appreciated. Foreign gunny No. 1 was marked up from .85 to 1.00. The minimum figure for domestic gunny No. 1 was advanced from .60 to .62½, but the high side was marked down from .70 to .67½. Foreign manila rope, formerly at 1.37½ rose to 1.45; transmission rope from .90 to 1.00, and scrap burlap from .50 @ .75 to a range of .75 @ 1.00.

Bolton & Sons Buy Mills Machine Co.

John W. Bolton & Sons, Inc., Lawrence, Mass., has purchased the business of the Mills Machine Company, of Lawrence, Mass., taking over all the latter's possessions with the exception of the real estate and buildings thereon. The business will be operated as the Mills Machine Company Division of John W. Bolton & Sons, Inc., and operations for the building of equipment formerly made by the Mills Machine Company will be carried on in the large plant of the Emerson Manufacturing Company, which is also a Division of John W. Bolton & Sons, Inc. All drawings, patterns, etc. of equipment manufactured by the Mills Machine Company are available for use for former customers of the Mills Machine Company. This latter concern was established in 1902 and for nearly a third of a century enjoyed an excellent reputation as builders of high grade pulp and paper mill equipment.

Bamboo vs. Sabai Grass for Paper

WASHINGTON, D. C., March 20, 1933—Contrary to the usual opinion it was recently found by the Indian Tariff Board that bamboo made stronger paper than sabai grass, according to a report to the Commerce Department from Assistant Trade Commissioner P. L. Hopper, Calcutta.

Increased use of bamboo in India for paper making has been aided by the recent imposition of an import duty of about $11 a long ton on wood pulp, it was stated. It was reported that a number of leading paper mills are preparing to increase the consumption of bamboo pulp in their plants.

A concern is reported to be planning a project for the gathering of bamboo and the manufacture of the plant into pulp in the Lemro district of Burma, while a similar project is expected to get under way soon in the Tavoy area.

Delaware Valley TAPPI Discusses Chromium

Meeting at Engineers Club, Philadelphia, Friday Evening Is As Usual Well Attended—Plans Announced for a Joint Meeting Saturday Evening April 22 of the Section with the Pennsylvania-New Jersey Division of the Superintendents Association.

The Delaware Valley Section of the Technical Association of the Pulp and Paper Industry met at the Engineers Club, Philadelphia, Pennsylvania, Friday, March 17.

Following the dinner, W. R. Maull, vice-president of Dill & Collins Inc. and chairman of the Section, announced that the plans are to have a joint meeting with the Pennsylvania-New Jersey Division of the Superintendents Association at the Benjamin Franklin Hotel, Philadelphia, on Saturday, April 22nd. The plan met with the wholehearted approval of the Section.

Nominating Committee Reports

The nominating committee report was next requested. A. J. Luettgen of the P. H. Glatfelter Company, Spring Grove, Pennsylvania, reported for the chairman, J. E. Plumstead of Jessup & Moore Paper Company, Wilmington, Delaware. The slate was reported as follows: For chairman, G. E. Landt, Continental-Diamond Fibre Company, Bridgeport, Pennsylvania; for vice chairman, H. P. Cannon, Container Corporation of America, Manayunk, Pennsylvania; for secretary-treasurer, J. C. Harper, Jr., West Jersey Paper Company, Camden, N. J.; for executive committee, E. J. Albert, Thwing Instrument Company, Philadelphia, and W. R. Maull, Dill & Collins Inc., Philadelphia. The elections will take place at a later meeting.

Paper Mill Men Going to Savannah

R. G. Macdonald, secretary of TAPPI was present and outlined the plans to have a paper makers' cruise to Savannah, Georgia from New York on April 28th, to attend the meeting of the Georgia Forestry Association, who will conduct a symposium on the manufacture of news print and other white papers from young Southern pines. The State of Georgia has equipped an excellent experimental paper mill at Savannah which is being operated by W. G. MacNaughton, formerly secretary of TAPPI, and engineer for the International Paper Company. An entire boat has been chartered and the present indications point to the likelihood that 100 or more will take the trip, combining a delightful sea voyage vacation with vital business at the extremely low rate of $25 per person, including transportation, meals and stateroom. Anyone desiring to take the trip is welcome and should communicate with R. G. Macdonald at 370 Lexington Avenue, New York.

Chromium Plating

C. F. Bonnet of the Chromium Engineering Company, Philadelphia, Pennsylvania, was the first speaker on the formal program, and took for his subject "The Engineering Application of Hard Chromium Plating to Paper Mill Equipment." In this paper he presented much interesting data relative to the occurrence, physical and chemical properties and applications of chromium.

Most of the chromium ores come from Rhodesia, Greece and Cuba and are imported into this country for use in refractory bricks, paints and ferro-chromium for chromium content steels. Chromium plating has been successful commercially only since 1925. If lustrous coating only is desired, as for ornaments and electro-deposition of from 30 seconds to 3 minutes from chromic acid is required but to get hardness such as is necessary for industrial use, the time of treatment varies from 1 to 6 hours. About one half a thousandth of an inch per hour is electroplated. Irregular shapes are more expensive to plate than single shapes.

Chromium is nearly as hard as the diamond and will resist the abrasion of most materials. It has about 65 per cent the electric conductivity of silver, which is rated at 100. Iron has 14.7 per cent conductivity on this basis. The chromium is brittle, however, and should not be submitted to direct impact.

Chromium resists the action of weak acids and alkalies but is attacked by muriatic, sulphuric and formic acids. It is not recommended particularly for corrosion resistance since chromium plating is slightly porous. It will, however, not tarnish and has a high surface energy. It resists wetting and materials will not cling to it.) It mills at 2768 deg. F.

Good electro-deposition may be made on steel, brass, copper and bronze but not on aluminum or zinc. Chromium plating of evaporator tubes has proven successful since it increases the life of charcoal-iron tubes. It is used for thermocouple protection, roller bearing sleeves, screen plates (flat and rotary), suction box covers, table and couch rolls, drier rolls, coating rolls and doctor blades, embossing rolls, pump liners and rods, gunning and printing rolls. It has not proven successful for fourdrinier wire cloth.

James Ramsay cited an experience he had using a glass suction box cover and stated that good suction was not obtainable because the wire could not grip the cover and make a good seal.

Mr. Bonnet stated that with the chromium plated box covers more vacuum must be applied than with wooden covers.

Mr. Maull asked how chromium plating affected the capacity of screen plates and Mr. Ramsay inquired if stringing of fibers was reduced. In response to these questions Mr. Bonnet stated that the inability of materials to cling to the metal assured a greater and more uniform capacity than is provided by bronze plates. This also assures a cleaner start-up on Monday morning.

Harvey Cannon cited the trouble with chromium plating scaling off calender rolls. Mr. Bonnet stated that if a good plating job is done the chromium will stick. It tends, however, to soften at 600 deg. F. and if it is subjected to any combination of impact and shear it may be removed in spots.

Paper Industry and Relation to Chemical Science

The next speaker was Dr. Ernest B. Benger, assistant general chemical director of E. I. du Pont de Nemours & Company, Wilmington, Delaware, who discussed the importance of product specifications for fitting paper into new lines of use and the methods of designing such properties.

The speaker gave a brief history of the paper industry and pointed out the research results in many of the process industries and the opportunities for progress in the paper industry. Dr. Benger's paper will probably be published at an early date in the PAPER TRADE JOURNAL.

Among those present at the meeting were the following: F. W. Varden, Barber Asphalt Company, Philadelphia;

J. C. Harper, West Jersey Paper Manufacturing Company, Camden, N. J.; E. N. Glauner, Downingtown Manufacturing Company, Downingtown, Pa.; Craig Maxwell, McDowell Paper Mills, Manayunk, Pa.; H. N. Lucas, Westinghouse Electric and Manufacturing Company, Philadelphia; C. J. Kern, Moore & White Company, Philadelphia; Ernest Brown, Chromium Engineering Company, Philadelphia; F. M. Herchemida, Chromium Engineering Company, Philadelphia; Valdemar Jacobsen, National Aniline and Chemical Company, Philadelphia; C. H. R. Johnson, Downingtown Manufacturing Company; M. P. Northam, National Vulcanized Fibre Company, Yorklyn, Del.; J. Bertwell White, National Vulcanized Fibre Company, Yorklyn; J. L. Mullin, Augustine Mills, Wilmington, Del.; J. G. Ramsey, Jessup & Moore Paper Company, Wilmington, Del.; H. F. Hoffmann, General Dyestuff Corporation, Philadelphia; A. M. Cooper, Westinghouse Electric and Manufacturing Company, Philadelphia; L. Justin, Container Corporation of America, Manayunk; F. J. McAndrews, McDowell Paper Mills, Manayunk; W. R. Maull, Dill & Collins Inc., Philadelphia; C. F. Bonnet, Chromium Engineering Company, Philadelphia; E. B. Benger, E. I. du Pont de Nemours and Company, Wilmington; H. P. Cannon, Container Corporation of America, Manayunk; W. M. Shoemaker, National Vulcanized Fibre Company, Yorklyn, Del.; E. N. Wennberg, Continental-Diamond Fibre Company, Bridgeport, Pa.; A. R. Boyd, F. C. Huyck and Son, Albany, N. Y.; J. Rissell Kessler, Philco Radio Corporation, Philadelphia; S. M. Hesser, Hinde and Dausch Paper Company, Gloucester City, N. J.; E. J. Albert, Thwing Instrument Company, Philadelphia; A. M. Lund, Mazer Paper Company, Landsdowne, Pa.; Joseph Razek, University of Pennsylvania, Philadelphia; A. W. Wickham, MacAndrews and Forbes Company, Camden, N. J.; C. E. Kinney, Hercules Powder Company, Wilmington, Del.; C. L. Ellis, Downingtown Manufacturing Company, Downingtown, Pa.; R. W. Kumler, Bennett Inc., Wilmington; Paul Koenig, P. H. Glatfelter Company, Spring Grove, Pa.; Fred Streicher, Dill and Collins Inc., Philadelphia; C. E. Peterson, Riegel Paper Corporation, Milford, N. J.; C. W. Hoffman, Riegel Paper Corporation; Gaynor H. Langsdorf, Riegel Paper Corporation; Jacob Edge, Downingtown Manufacturing Company, Downingtown; J. B. Allen, Chromium Corporation of America, New York; C. W. Rivise, Philadelphia; A. J. Luettgen, P. H. Glatfelter Company, Spring Grove, Pa.; W. O. Hisey, P. H. Glatfelter Company; Sidney Hausman, Congoleum-Nairn Inc., Asbestos, Mr.; R. Von Hazmburg, Scott Paper Company, Chester, Pa.; E. L. Knowdler, Congoleum-Nairn Inc., Marcus Hook, Pa.; John Roslund, Moore and White Company, Philadelphia; E. F. Troop, P. H. Glatfelter Company, Spring Grove; Dean Caldwell, Philadelphia; H. H. Hanson, H. C. Hamilton and Son, Miquon, Pa.; C. A. Shubert, Dill and Collins Inc., Philadelphia.

A. P. W. Paper Co. Wins Package Prize

In the Annual Package Design Competition for the Irwin D. Wolf award, sponsored by the American Management Association and the National Alliance of Art and Industry for the most effective package developed and placed on the market between January 1, 1932, and February 15, 1933, the A. P. W. Paper Company won the award in the folding carton class. It was a design for the new A. P. W. Soft White carton. This new carton will introduce a new tissue for women. More than 200 packages were entered in the competition by some of the leading manufacturers. The A. P. W. Paper Company was the only winner among those who are engaged in the paper industry.

News of the Fox River Valley

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 20, 1933—Box board manufacturers, particularly Hummel & Downing Company, Milwaukee, anticipate a marked stimulation of production with the resumption of manufacturing by the breweries. Very little of the wooden container equipment remains for bottled beer and the convenience and difference in cost of the corrugated or heavy board carton will make it used universally, it is believed, in dispensing these beverages by the case. Immediate orders on a large scale are anticipated by Wisconsin plants. Milwaukee will be one of the heaviest users, because several large breweries doing a national business are located there. Mills recognize also that breweries have been heavy advertisers, and that a valuable market is restored for the paper industry generally by the action of Congress.

Consolidated Water Power Surplus

Net income of the Consolidated Water Power Company, Wisconsin Rapids, Wis., the power subsidiary of the Consolidated Water Power and Paper Company., was $101,967.02 for the year of 1932, according to the annual statement. This amount was transferred to surplus. Operating revenues amounted to $632,661.68. The unappropriated surplus now shown by the books is $941,662.26.

Nicolet Paper Co.'s Assessments

Reduction of the property assessment of the Nicolet Paper Company, DePere, Wis., from $250,000 to $150,000 annually is being given consideration by the common council of the city, following a conference between city officials, company officials and other business men. The manager assessment was shown by H. B. Kuhns, general manager of the mill, to be burdensome in view of the company's operating situation. A re-valuation of the mill therefore is asked in order to scale down the present figures $100,000. Mr. Kuhns explained that the stockholders and bondholders have derived no earnings thus far, and that the property, employing more than 100 men, is operating at a loss now. The net saving to the company on taxes would be $3,255 annually. A personal property tax of $1,500 is paid annually in addition. The final decision rests with the board of review of the city, meeting in August.

Pay Roll Difficulties

Pay roll difficulties of practically all paper mills in Wisconsin were removed this week with the resumption of banking. The banks in these centers are generally sound, and most of them reopened for unrestricted business. During the bank holiday, the Nekoosa-Edwards Paper Company, Nekoosa, Wis., utilized all of its cash on hand to proportion out to employees until their checks could be honored in full. The Consolidated Water Power and Paper Company and the Ahdawagam Paper Products Company, Wisconsin Rapids, arranged to obtain sufficient cash from outside sources to cash checks of all its employees.

Reforestation in Wisconsin

Reforestation work in Wisconsin will be helped by a county zoning system which segregates forest lands from farming areas and concentrates the work of tree planting. Oneida county, in the heart of the wooded areas, is the first to adopt the zoning idea. Squatters will no longer be permitted to start farms in cutover areas, where farming is usually unsuccessful, but will be obliged to seek better territory. The state's conservation program will eventually utilize 10,000,000 acres, according to D. H. Kipp, of the Wisconsin Conservation Commission.

Paper Mill Operations Light In Ontario

Majority of Fine Paper Manufacturers Are Only Working on Five Day Weekly Schedules—Demand for Book, Bond and Ledger Papers Continues Quiet, With Tonnages Moving Slowly—Volume of Sales of Various Grades of Coated Paper Falls Off

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 20, 1933—With the printing industry at a low ebb, and with other consuming sources curtailed, the wholesale paper trade in Ontario is going through a decidedly quiet period. There has been a big falling off this year in the volume of direct mail advertising and in the paper used by the publishing trade. Advertising volume has been light all round and as a consequence the sale of paper by wholesalers has suffered a heavy drop. As yet there has been little indication of the better class papers coming back to their own. Advertising pieces are being gotten out on the cheaper grade papers and the buyers of printing are content with cheap stock for their booklets, folders and similar matter.

Hope for Betterment This Spring

No one is predicting just how long this state of affairs is going to last but paper merchants are hoping for a turn for the better early this spring, recognizing that their business will be governed by the amount of paper used by general business concerns which, at the present time is light, owing to the continuance of the depression. It is noted that the paper trade is not in nearly as bad shape as many other commercial lines and there is a distinct feeling of optimism that better business will very soon put in its appearance. Meantime the wholesale paper houses are all doing business on a more or less restricted scale; there have been practically no failures during the depression period and there is a feeling abroad that another month or two will see an active market again.

Light sales by the paper merchants of course are reflected by lessened activity among the paper mills. For instance most of the coated paper mills are only operating five days a week with eleven hours a day. It is increasingly difficult to keep to that schedule even, for there has undoubtedly been a falling off in sales of coated stock. Most of the fine paper mills are operating at about the same capacity under a light demand for book, bonds and ledgers. These lines are decidedly quiet and tonnage has fallen off materially since the first of the year. There is a fair amount of business passing in flour sacks but in other coarse bag and paper lines business is decidedly dull. For a while there was a tendency toward larger individual orders in the wrapping paper market but this has fallen off again now and car load lots are more or less of a rarity.

Paper Converting Trade Slow

In the paper converting trade generally there has been no improvement to speak of and stationery manufactures, envelope makers and similar paper lines are all in very light demand. Glassine, greaseproof and waxing papers, which a few months ago were enjoying a fair call, are now in light demand again and what business the manufacturers of these classes of paper are getting is of a highly competitive nature. Light weight paper manufacturers are in the same position. Their sales have fallen off materially during the past several months and so far they have been unable to recapture the old volume. Paper box manufacturers are still operating at reduced capacity and business with them is distinctly dull. Board mills, also, are complaining of lack of business, with the mills operating more lightly than they have been for some months.

Railways Want Paper Business

For some years past the paper mills in the Niagara Peninsula and elsewhere in Ontario have either been using their own trucking system or have been under contract with trucking companies to truck all paper shipments from the mill to the door of the paper purchaser in Toronto and other centres. The C. N. R. and the C. P. R. are now endeavoring to recapture this business but so far they have not met the rates quoted by the motor transport companies. The steam railways have initiated a free pick-up of freight but as yet they have not made their proposition sufficiently attractive to warrant a change in so far as the paper industry at least is concerned.

Province to Indemnify Hydro

The Ontario Government has agreed to indemnify the Hydro Commission of the province in connection with taking over the Abitibi power development from the Ontario Power Service Corporation, a subsidiary of the Abitibi Power and Paper Company, but the development has not yet been completed, and the extent of the liability of the Government under its indemnity has not yet been ascertained, the Hon. J. R. Cooke, chairman of the Hydro Commission, informed the Legislature this week. He stated that it was estimated that it would take $5,000,000 to complete the project and to pay liabilities, and, of this amount, it is expected that approximatley $2,600,000 is available in the hands of the Montreal Trust Company, trustee under the mortgage securing the bonds of the company. A series of questions concerning the project were answered in the House by the Hon. Mr. Cooke.

Notes and Jottings of the Trade

The many friends in the paper trade of Fred L. Ratcliff, head of the Ratcliff Paper Company, Toronto, will regret to learn that he has been confined to his home for several weeks with a severe illness.

E. H. Wilkinson, of E. H. Wilkinson and Company, paper mill representatives, Toronto, has returned from a five weeks trip to the Pacific Coast. Mr. Wilkinson stated that while he found business fairly good in British Columbia it was correspondingly bad in Winnipeg and the Prairie Provinces.

Considerable damage was done to the Parliament street branch of E. Pullan, Ltd., rag and paper stock dealers, Maude street, Toronto, by a fire which seriously injured two firemen.

W. J. Parkes, secretary of Interlake Tissue Mills, Ltd., Merritton, Ont., is spending some time in Jamaica in an endeavor to regain failing health.

Crane & Co. on Full Schedule

DALTON, Mass., March 20, 1933—Crane & Co. manufacturers of currency and bond paper have been operating on full schedule, as a result of the bank holidays. The company is rushed with orders for certificates to be used in place of money during the present emergency.

Quebec May Permit Export of Power to U. S.

Measure Introduced Before Provincial Legislature May Prove of Major Importance to Paper and Pulp Industry on Both Sides of International Border — Maximum Amount Which Could be Exported Between 300,000 and 500,000 Hp.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 20, 1933—A development of major importance to the power companies in the Province of Quebec, and incidentally to the pulp and paper industrial on both sides of the international border, is seen in the introduction before the Quebec Legislature of a bill to permit the export of power to the United States. As the bill was introduced by a member of the government, its early ratification by the Legislature appears certain. Hitherto Quebec has been the stumbling block to power exports across the line, but in the light of prevailing conditions it is stated that all parties in authority, both Dominion and Provincial, are in favor of permitting the export of power.

It is understood that the Quebec Legislature will fix the maximum amount which could be exported at between 300,000 h.p. and 500,000 h.p. Delivery would be made to the Niagara and Hudson Power Company, to be used over the various connections of that company throughout the State of New York. The transmission line for delivery of the power to Niagara and Hudson would take approximately three months to build.

The bulk of the power to be exported would be provided by Beauharnois Power, McLaren Quebec Power, and Gatineau Power, but all the larger Quebec companies would benefit.

Howard Smith Earnings Higher

The annual report of Howard Smith Paper Mills, Ltd., for the year ended December 31 last, reveals increases in operating profit and gross income and an improvement in net working capital position. It is pointed out by Harold Crabtree, president of the company, the improvement in earnings was achieved in the fact of a shrinkage in volume of business together with lower average selling prices for its various products.

Net operating profit of $1,188,980 compares with $1,048,760 for the year 1931, and, after addition of other income at $42,265, and $146,309 for discount on bonds, redeemed, total revenue of $1,377,554, compares with $1,101,715. Bond interest requirements were covered 2½ times before depreciation and 1¾ times after depreciation. Deduction of bond interest at $552,990; U. S. exchange at $67,850; depreciation, etc., at $426,354; income tax provision for subsidiary at $1,630; contingent reserve at $50,000; miscellaneous adjustment of $145,958, and dividends on subsidiaries at $5,604, left a balance of $132,772, which compares with $62,362 on the profit and loss account for the preceding year. Previous balance was brought forward at $1,200,592, making a profit and loss balance in the current report of $1,327,760, subject to minority shareholders' equity.

Net working capital at the end of 1932 is shown at $1,031,374, a ratio of 1.50, which compares with $945,572 at the end of the preceding year, when the ratio was 1.30. Among the assets plant account is shown down by slightly over a million, while among the liabilities capital surplus shows a reduction by about the same amount, reflecting the writing down of the assets of a subsidiary.

Donnacona Paper Co.'s Report

The annual statement of the Donnacona Paper Company shows that profits in 1932 aggregated $241,383 after deducting $34,091 bank loan interest and compare with $383,233 in the preceding year. Bond interest absorbed $30,625 and depreciation reserve $204,721, leaving a surplus for the year of $6,035 as compared with a debit balance of $835,931 in 1931.

The liquid position of the company was strengthened, and at the end of the year current assets exceeded current liabilities by approximately $400,000, whereas at the beginning of the year such liabilities exceeded assets by $700,000. Bank loan of $768,232, at the beginning of the year was reduced to $184,500.

The falling off in profits during 1932 was the direct result of lower mill operations and a decrease in the output of news print. The mill, with a capacity of 75,000 tons, produced only 24,000 tons as compared with 54,000 tons in 1931. The saving effected, however, in reduced interest charges as a result of the reorganization carried through during the year left the surplus of $6,035 as compared with the previous year's debit balanced $835,931.

P. H. Kernan, the president, states that the products of the insulating board mill have continued to be well received, both in the domestic and foreign markets, and the demand during the past year has equalled that of 1931. "Due to reduction in manufacturing costs and more favorable selling arrangements," he adds, "we have succeeded in showing a profit for the first time since the board mill went into production."

Merrill B. King Fell From Plane

A sworn statement made by Joseph Holman, Nashville, Tenn., the only witness to the tragic fall from an air liner near Charleston, South Carolina, which caused the death of Merrill B. King, president of the Rex Paper Company, Kalamazoo, Mich., March 2, is to the effect that Mr. King was very sick and that in his opinion, was thrown against the door, due to the bumpy condition of the atmosphere. This statement was obtained by Harry C. Bradford, vice-president of the Rex Paper Company, who has just returned from a trip to Nashville.

Mr. Holman's theory is that Mr. King had gotten to his feet to seek relief from air sickness, and that a lurch of the plane, due to bumpy conditions, caused him to be thrown against the door. Mr. Holman said in his statement that he saw Mr. King going through the door, backward, clutching toward the inside of the plane. He positively identified photographs of Mr. King as those of the man he saw falling backward through the plane door.

No trace has been found of Mr. King's body. The Kalamazoo paper mill executive fell from a height of about 700 feet while the plane was over water-covered rice fields about 34 miles west of Charleston. Mr. King was en route to New York City from Florida.

Mr. Holman, in discussing the ride told Mr. Bradford it was so bumpy the passengers were thrown about in their seats. Some were airsick. A 13-year-old daughter of Mrs. Ruth Bryan Owen, and granddaughter of the late William Jennings Bryan, was a passenger on the plane and was ill. One bump, Mr. Holman said, threw the pilot up from his seat and the pilot's head struck a wheel overhead. The pilot adjusted the wheel to prevent a recurrence.

Boston Paper Merchants Hold Annual Dinner

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 20, 1933.—The forty-seventh annual meeting and anniversary banquet of the Boston Paper Trade Association, held Wednesday evening at the Algonquin Club, was highly interesting and attended by approximately a hundred members and guests. A reception was held from 6 to 6:30. An orchestra and community singing were included in the program. A feature of the evening was the address by Dr. George H. Bigelow, Commissioner of Public Health for Massachusetts, on "Why Public Health?" Dr. Bigelow made a practical application of his profession and the work of the State Department under his supervision to present day conditions in a way that kept the close attention of his audience. At the close of his talk very keen appreciation was shown by those present.

Charles A. Esty, president of the association, presided. In the business meeting preceding Dr. Bigelow's address, an impressive feature was the reference to sick members and those who had passed on during the year. After the reading of the names of members who had died—Arthur W. Bartlett, Thomas H. Casey and William W. McLaurin —a bugler stationed in an adjoining room sounded "Taps," with the guests and members standing in the dining hall. Reports of officers followed. William C. Ross, of the Fort Hill Paper Company, Boston, was elected to regular membership in the Association.

It was voted to make a proposed change in Article VII of the By-laws, providing for bonding the treasurer, at the expense of the association, in such amount as shall be determined by the executive committee.

The following officers were elected: First Vice-President, Fred Main; Second Vice-President, F. Bendel Tracy; Treasurer, T. Charles Casey; Secretary, John L. Hobson. Arbitration Committee: George W. Wheelwright, Arthur L. Hobson, Irving N. Esleeck, Arthur E. Ham and Henry C. Thayer. Executive Committee: Norman Harrower, Charles W. Fields and Edwin W. Porter, Jr. Membership Committee: William N. Stetson, Jr., W. W. Jenks, Charles A. Young, Royden Loring and R. M. Stone: Auditor, George D. Allen.

Dr. Bigelow Discusses Public Health

Dr. Bigelow's address followed the business meeting. He spoke substantially as follows:

"In health, as in other matters today, there seems to be an increasing tendency to encroach on one's privacy. Less and less can one enjoy sickness without considering its influence on the community. Again, some are apprehensive that this paternalistic interference will undermine the position of the home, will coddle the unfit, and will develop physical self-consciousness. If the home has not sufficient vitality to maintain its position, it is probably doomed in spite of anything we can do. There is no evidence that in the good old "uncoddled" days the graveyards held a higher proportion of the unfit than the market places. Physical self-consciousness already exists, due to the terrific inundation of commercialized health and the widespread misinformation in regard to disease. It is not fact, but fallacy, that breeds hysteria.

"Particularly in these times we must put knowledge to work to maintain the health of the people. The need of pure water and safe milk is quite generally recognized. Immunizations against smallpox and diphtheria are neglected. Going to bed early instead of "working it off" when influenza is threatening is usually employed only by the lazy, in which case if we have enough influenza only the lazy will populate the earth. The discriminating examination of all contacts with a case of tuberculosis is largely neglected, contributing to the immortality of this disease. Sex and social hygiene are taught by the winds, if at all. In the field of personal hygiene, nutrition probably surpasses all others in importance since the empty belly and the harassed mind are the two great health menaces of these times. The great importance of milk and milk products, fruit and vegetables, and the whole bread and cereals in the diet of the people is not recognized. Neither is the relative unimportance of meat recognized. Adequate nutrition includes the correction of physical defects and rest. In work, play, sleep, and good and evil works moderation is the keynote of health. For an unharassed mind until work returns while community effort can help, we must largely depend upon the guts of the people to steady us in these times as a nation that we may not lose our nerve."

Those Who Attended

Those present were: George Allen, Harold A. Allen, George C. Andrew, John A. Andrew, Sumner B. Andrew, S. G. Ashley, Henry C. Barr, George H. Bigelow, W. W. Binford, Floyd H. Blackman, John F. Blackman, John H. Brewer, C. J. Brown, M. Arthur Burr, Alfred L. Carter, Hubert L. Carter, R. V. Case, T. Charles Casey, Frank C. Cate, Howard E. Chase, Nathan S. Clark, E. L. Cummings, Frank B. Cummings, J. C. DeCoster, E. B. Dik, William E. Doble, Robert W. Ely, Irving N. Esleeck, President Charles A. Esty, R. D. W. Ewing, Charles W. Fields, Paul Fiske, H. C. Fowler, K. B. Fullerton, W. K. Graves, T. C. Greene, H. C. Ham, J. L. Ham, Norman Harrower, Edgar P. Hay, Alan H. Helfrich, William H. Hilton, Arthur L. Hobson, John L. Hobson, W. B. Holmes, Hartley Hurlburt, John E. A. Hussey, John Kelley, Fred B. Korbel, E. H. Little, Hubert W. Lockhart, E. R. Lyman, M. L. Madden, Fred Main, Wallace Marston, W. J. McLellan, Frank H. Merrill, Clyde B. Morgan, J. L. Munro, C. E. Newell, Robert Nizison, J. J. O'Brien, Maurice A. Park, E. A. Pearson, R. F. Piper, Leon M. Poore, Edwin Porter, Walter M. Pratt, Charles S. Proctor, W. J. Raybold, Wm. C. Ross, Horace B. Sargent, Walter P. Simonds, A. R. Smith, Donald R. Smith, S. Southworth, Wm. N. Stetson, Jr., E. H. Sussenguth, J. Gilbert Swift, Jr., Jesse G. Swift, R. P. Teele, Harry C. Thayer, F. Bendel Tracy, W. Gardner Very, John Vivian, Mark Warren, E. L. Wood, Fred L. Wood, Percy D. Wyman and J. C. Young.

New Merritt Engineering Bulletin

The Merritt Engineering and Sales Company, Inc., Lockport, N. Y., have just issued a bulletin descriptive of their new Stanley Speed Variator. This is a variable speed power unit of the disc and roller traction type having a speed range of 3 to 1 with an infinite number of speeds between these units. It is offered in units of 2 horse power capacity up to 20 horse power.

Special units capable of a maximum speed range of 9 to 1 with constant horse power output are also available. The constant horse power output feature makes it available for practically all variable speed applications and gives to them an exceptionally high efficiency rating.

A copy of the bulletin which fully describes and illustrates this new speed variator may be obtained for the asking.

Obituary

Joseph M. Huber

Joseph M. Huber, president of J. M. Huber, Inc., and affiliated companies, died at his home, Locust, New Jersey, on March 3, at the age of 74. Mr. Huber was born in Munich, Germany, in 1858, and began his business career with his father, head of the firm of Michael Huber, leading European color manufacturer, which business had been established in 1780. At the age of 25, he came to this country and established a color importing business in New York. As the business expanded, he erected his own color factory here and later undertook the manufacture of printing inks, originally as an outlet for the dry colors. The ink business developed rapidly and today the Huber Company is a leading factor in this line.

The Huber Company is closely identified with the paper industry not only through its printing ink connections, but by reason of the fact that it is a prominent supplier of filler clays to the paper mills.

Although in remarkably good health almost to the time of his death, Mr. Huber in recent years had gradually transferred the responsibilities of his business to his two sons, H. W. Huber, vice president and general manager, and Walter Huber, Treasurer.

The successful development of the varied enterprises bearing his name is a real tribute to the unusual executive and business ability of Mr. J. M. Huber, and his loss will be keenly felt by his friends in the many fields of American industry, with which he came in contact.

The J. M. Huber Corporation embraces the following subsidiary companies: J. M. Huber, Inc., controls the general sales of all Huber products, and operates printing ink factories at Brooklyn, N. Y., Bayonne, N. J., and St. Louis, Mo.; J. M. Huber Company, of La. Inc., operates carbon black factories at Swartz, La., Borger, Texas, and Lance Creek, Wyo.; J. M. Huber Petroleum Company, engaged in the production and marketing of petroleum and natural gas; J. M. Huber Pigment Company, operates rubber clay mines at Graniteville, South Carolina, and paper clay mines at Langley, South Carolina; J. M. Huber, Ltd., handles sales of Huber products in the United Kingdom; Pacific American Gasoline Company, produces and markets natural gasoline in the Panhandle field of Texas.

George K. O'Donnell

George K. O'Donnell, president and one of the organizers of the American Seal Kap Corporation of Long Island City, died suddenly on Saturday, March 18, at his residence, 812 Park avenue, New York, of a stroke of apoplexy. Mr. O'Donnell had been active in the corporation since its organization five years ago. He was 49 years old.

A former resident of Washington, Mr. O'Donnell had been engaged, during his career as an organizer of industrial enterprises, in various phases of the paper manufacturing industry, since his early connection with the Lehigh Paper Mills in Pennsylvania.

A former vice-president of the Sanitary Products Company of Philadelphia, he was also president of the Germ Proof Cup Machine Company in Boston and spent several years with the Coe Stapley Manufacturing Company of Bridgeport.

It was while he was head of the Consolidated Dairy Products Company in Long Island City that he joined in organizing the corporation with which he was identified at the time of his death.

Mr. O'Donnell is survived by his widow, Edith, and a daughter, Eileen.

He was a member of the Lambs, the Cloud Club, Sands Point Club, and the Racquet Club of Washington. He was also a member of Paumonok Lodge, 855, F. and A. M.

Preston Pond

BOSTON, Mass., March 20, 1933—Preston Pond, formerly vice-president of the Dennison Manufacturing Company, died March 16 at his residence, 8 Prospect street, Winchester, Mass. Mr. Pond, who was a member of an old New England family, was for forty years identified with that company, where he began to work as a boy, rising until he became vice-president, as which he continued to serve until his retirement from active business life in 1910.

Mr. Pond was born in Wrentham, Mass., Aug 3, 1855, the son of Handel and Susan (Shepard) Pond, both of Wrentham, and members of old families that settled in that section of the State about 1650. Mr. Pond's father died when rather young. The family then removed to Winchester, which had been Mr. Pond's residence since 1870.

He married Frances Dwinnell, daughter of James F. Dwinnell. A few years ago they celebrated the fiftieth anniversary of their wedding. Besides his wife, Mr. Pond is survived by two sons, Gardner N. Pond and Kenneth Pond, both of Winchester, and a sister, Miss Katherine F. Pond, of Winchester. Nephews are Clarence H. Pond and Shepard Pond, president and treasurer of the Ivers & Pond Piano Company of this city; and Dana Pond, the well known artist, long a resident in Paris, but now on an extended trip which has taken him to Senegal and the Canary Islands.

Frank Dale Sawyer

BOSTON, Mass., March 20, 1933—Frank Dale Sawyer, employed for 47 years in the box board industry without the loss of a single day, died March 13 at the residence of his daughter, Mrs. William J. McClintock, 66 Norman Road, Melrose, Mass. Mr. Sawyer, who was 80, was very well known as a shipper in the box board trade.

He was born in Gloucester, Mass., son of Mr. and Mrs. Henry A. Sawyer. He started in the board industry when a boy, with Theodore Pinkham, who was in the straw board business in Boston. The Boston Straw Board Company bought the business of Theodore Pinkham and Mr. Sawyer continued with that company. When the firm of Baird & Bartlett was formed, April 1, 1907, Mr. Sawyer became shipper for the concern, retiring some twenty years ago.

Mr. Sawyer was a charter member of the Odd Fellows Lodge of Chelsea and its oldest living member. Besides his daughter, he leaves a son, Louis S. Sawyer, of Abington, Mass. The funeral was held at the First Baptist Church, Everett, Mass., where he was senior deacon, on March 15.

Arthur B. Gladwin

Arthur Buckingham Gladwin, paper manufacturer, who was vice-president of the McLaurin Jones Company since 1927, died Monday, March 13, of heart disease at his home in Englewood, N. J. He was born in Middletown, Conn., sixty-four years ago. Surviving are his widow, Irma Reinmund Gladwin; a daughter, Olive Vinette, and a brother, Ellis Warren Gladwin, of Bronxville.

While an undergraduate at Princeton, where he received the degree of C. E. in 1891, Mr. Gladwin was captain of the gun club and the tennis club. After a brief experience in his father's paper firm, S. M. Gladwin & Co., 82 Duane street, he took a position in Wall street, but soon returned to the paper business and remained in it the rest of his life. His clubs were the Princeton, Knickerbocker Whist, Cavendish, Cottage of Princeton and the Men's Club of Englewood.

ALL BRANCHES OF PAPER INDUSTRY OPTIMISTIC

(Continued from page 9)

Company; L. Fitzgerald, Hummel-Ross Fibre Corporation; R. S. Reed, Quaker City Paper Company; E. L. Richards, Buffalo Envelope Company; Frederic Balch, Schuylkill Paper Company; Edward A. Keller, Garrett-Buchanan Company; H. N. Newell, American Manufacturing Company; S. C. Brower, J. L. N. Smythe Company; W. C. Mansfield, Union Bag and Paper Company; Geo. Sherborne; Wm. Muller, Orono Pulp and Paper Company; D. Crimmins, Edw. H. Fitler Company; I. J. Sheppard, Peerless Paper Company; H. S. Platt, Denny Tag Company; W. V. Edkins, Philadelphia Paper and Cordage Association; H. Lefkowitz, S. Walter, Inc.; Cecil Bentley, Terminal Paper Company; H. Satterthwaite, Satterthwaite-Cobaugh Company; D. H. Newell, International Paper Company; A. B. Sherrill, mill agent, and Mr. Swan, Kalamazoo Vegetable Parchment Company.

Movement to Remedy Unfair Practices

In this matter of unfair competition, a movement is afoot in which the fine paper trade and the Typothetae of Philadelphia are co-operating for the purpose of remedying most harmful conditions and practices. Members of the Typothetae constituting the majority of the legitimate printers of Philadelphia are by no means averse to a standardization of prices, even though there might result a slight increase over the present ones. They are virtually unanimous in opinion that the extension of unwise credits is harmful because of fly-by-night competitors and most unfair advantage in competition with established firms, and moreover that with price standards not maintained there is such a bewildering succession of perhaps temporary advantages and permanent disadvantages, that evils threatening their very business existence have arisen.

Reference to this condition of affairs is made in the last issue of the Typothetae's letter in which Executive Secretary Meeks says: "We are repeatedly asked what can be done about unfair competition we run into these days. We understand that Pennsylvania has a law which covers this. Then there are a number of Federal laws which may be made use of. The State Commission has done some mighty good work for a number of industries in regard to this. Unfair competition can be handled if we are ready for it. Are we?"

It was pointed out that the action of the Supreme Court of the United States in the case of the issue brought by the Appalachian Coal Dealers Association, which it is understood gives judiciary confirmation of the right of organizations to combine for mutual interests and for the elimination of unfair trade practices, which has given an immense impetus to the movement to study and attack price cutting below cost of manufacture and of handling.

President Hooper Addresses Gathering

President George K. Hooper made an address in which he gave expression to thoughts which permeated not only the coarse paper trade but quite as well the fine paper, and in fact the entire paper industry. In the course of his address he said:

"Whilst the principles on which this Assocation is founded pertain to the promotion of good fellowship among paper and twine manufacturers and distributors, also the interchange of business relations between the same, I feel that at this time it would be advisable to dwell on some of the more important conditions confronting all engaged in the paper and cordage industry.

"It is needless to dwell upon the financial statement of manufacturers and distributors of paper and cordage. The past is now a matter of history. We are now concerned with the future and how to make up the terrific losses that have taken place in our industry. It is certain that unless drastic measures are taken, many who are in business today will not continue in business very long in the future. For the past few years, much business has been obtained with the idea in mind of preventing 'the other fellow from getting it.' This method of obtaining business leads only to self destruction. Do not forget for one moment that the so called 'other fellow' is, as a matter of self preservation, working with the same thought in mind.

"Why can not we, as representatives of the sixth basic industry, determine to put into effect at once, a plan whereby we will all make at least a living, and thereby permit the bookkeepers we employ to use black instead of red ink? There is an overproduction of paper, we all admit. Is this a sane reason why there should continue to be an overproduction? I think not. We have all stood aghast and watched paper manufacturers continue to reduce their prices regardless of costs and admit in the same breath that they were selling below costs. This same information informed the jobbers that their inventories had less value. Let us all—engaged in the paper and twine industries—determine to demand reasonable profits, improve our products and prepare to do less but a profitable business. Surely, the concern that shows $10,000 net profit on a small investment is more credit to the business than one with many millions of dollars involved, but showing losses running into the millions.

"For the past few years, industries of all kinds have been expecting outside help to put their houses in order. In some cases, the government did extend financial aid to some industries. Whether or not this aid was beneficial, we are all able to tell without much speculation. The sooner we determine to put our own houses in financial order and realize that our salvation must depend upon our own individual efforts entirely, the sooner we will be headed towards the time when our balance sheets will be favorable. The remedy to the problem is simple, but until we tackle the problem with determination, not to hurt our competitors by taking business from them, but to be fair with ourselves, thus compelling us to be fair with our fellow man, the sooner we will be able to show the profits to which we are entitled."

The third of the trade organizations to show activity during the week was the Paper and Bag Institute, which sent out a call for a meeting to be held on Wednesday evening at the Elks Club in order to complete its plans for an annual banquet sometime in March or early in April instead of March 1, as had originally been agreed on.

Paper Merchants Discuss Conditions

The Paper Trade Association of Philadelphia, under President William A. Hentz, met in special session on Tuesday last for the informal discussion of conditions which—fortunately because of the reopening of the banks—have since been largely remedied. Fifteen houses were represented at this meeting.

The Philadelphia Paper Stock Dealers Association, which has not recently held any meetings, has in contemplation a gathering at an early date with the possibility of a get-together dinner or luncheon.

In the strictly business field, the oustanding development of the week was the action of a majority of the sulphite mills on Friday in withdrawing their prices. This it is believed will parallel the stand taken by the coating

mills, particularly those in the West, in similarly recalling prices two weeks ago and of making a slight advance. Sulphite prices have been so low that an advance is regarded impending and as desirable—at all events a standardization is of supreme importance.

News of the Trade

The jobbing trade in general showed some slight improvement in actual buying and a considerable buoyancy in the handling of customers. The ending of the bank holiday and the virtual recall of all scrip money, of course, had a most beneficial effect, and collections are now back to even a little better than normal of the last month or two.

Many in the coarse paper trade believe that even though kraft advanced some months ago, there is impending another and perhaps a drastic advance.

The paper stock market is virtually bare of the better grades of coatings but unfortunately there has been no advance in mill prices. Demand keeps the market cleared up, although some dealers are disposed to hold stocks for better prices, which they are sure are ahead. For mixed and commons also the market was slightly improved during the week, but only one dealer thus far has been able to advance his prices and then only 50 cents a ton.

Local container mills are of course still suffering from the influx of kraft container boxes from southern mills.

Charles McDowell of the McDowell Paper Mills, is sojourning in Florida, but is expected back in his office this week.

I. P. Mulch Paper at Flower Show

The International Paper Company will be the only paper company to have an exhibit at the International Flower Show which opened at the Grand Central Palace Monday, March 20. The company has three miniature gardens in its exhibit with vegetable and flower plants actually growing. In these gardens the Company demonstrates the use of its Gator Hide Mulch Paper which substantially increases the yield of farm products and promotes their rapid growth.

Gator Hide Mulch Paper is a specially treated kraft paper used in agriculture in place of other types of mulches such as straw, dust, pine needles, etc. As it is black in color, the paper transmits the sun's heat to the soil instead of reflecting it. The paper prevents the growth of weeds and conserves the moisture in the ground covered with it. Through the combination of heat and moisture in the soil, plant life is greatly stimulated and larger, earlier, and more productive crops are obtained.

Gator Hide Mulch Paper has been developed by International Paper Company in line with its general policy of diversification of products.

Boston Paper Trade Happenings

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 20, 1933—Knight, Allen & Clark, Inc., is making a drive on Woodbine Duplex Enamel, a coated paper. This firm is issuing a book, listing special lots and special lines.

John Carter & Co., Inc., is offering a new Invincible Bond, in white only, in a rich cockle finish.

William F. Mann, of the sales staff of Baird & Bartlett Company, has sailed for Bermuda and the West Indies as far as St. Kitts, expecting to be away about sixteen days.

C. T. Dole, of the Champion International Company, Lawrence, Mass., called on the trade last week.

New TAPPI Members

The Executive Committee of the Technical Association of the Pulp and Paper Industry have announced the following elections to membership:

G. Lamont Bidwell Jr., night control man, Riegel Paper Corporation, Milford, N. J. is a 1929 graduate of Cornell University. For one year he was an apprentice in the Alliance Paper Mills, Merritton, Ontario.

David De Zurik, sales engineer, De Zurik Shower Company, Sartell, Minnesota, attended the University of Minnesota and for one year was a chemist at the Watab Paper Company, Sartell, Minnesota.

John D. Dickson Jr., chemist, paper mill department, R. T. Vanderbilt Company, East Norwalk, Conn., is a 1932 graduate of the University of Maine, and was formerly a millwright at the Munising Paper Company, Munising, Michigan.

Paul Dieterle, research chemist, Louis Dejonge & Co., Stapleton, Staten Island, N. Y., received his Ph.D. from the University of Basle, Geneva, Switzerland, in 1904. From 1905 to 1914 he was engaged in production research for the Agfa (dye plant) at Lyon, France. In 1914 and 1915 he was professor of organic chemistry in the University of Barcelona, in Spain. From 1917 to 1920 he was manager of the Dye Section of the Society Electroquin Flix, Spain. From 192 1to 1924 he was head of the Dye Section of the Chem. Veredin, Czecho-Slovakia. From 1925 to 1927 he was engaged in research for the National Aniline & Chemical Company, Buffalo, N. Y. From 1927 to 1932 he was with the Agfar Ansco Corporation at Binghamton, N. Y.

Gilbert Early, Jr., chemist, Owens-Illinois Glass Company (paper mill division), Carlisle, Ill., is a 1932 graduate of Washington University.

Erling Fladmark, chief chemist, Champion-International Company, Lawrence, Mass., is a 1919 graduate of the Norwegian Technical University. From 1920 to 1922 he was chemist for the Riordon Company, Temaskaming, P. Q. In 1922 he was chemist for the Ha Ha Bay Sulphite Company, Port Alfred, P. Q. From 1922 to 1924 he was research chemist for Kimberly-Clark Corporation, Niagara, Wis. From 1924-1926 he was chemist for the the Barret Company, Chicago, Ill.; from 1926 to 1931 paper chemist for the Westinghouse Electric and Manufacturing Company, E. Pittsburgh, Pa.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 22, 1933—The Government Printing Office has received the following bids for 8,450 pounds of yellow gummed paper; Virginia Paper Company, at $7.90 per M sheets; Mathers-Lamm Paper Company, $8.56, $9.63, and $9.84; Whitaker Paper Company, $9.27; R. P. Andrews Paper Company, $9.45; Reese & Reese, Inc., $9.60, and $9.55; Barton Duer & Koch Paper Company, $8.70; Walker Goulard Plehn Company, Inc., $9.20; Old Dominion Paper Company, $9.09; L. Hyman & Sons, $9.69; and Milton Bradley Company, $10.16.

The following paper awards have been announced.

The Aetna Paper Company will furnish 200,000 pounds of 23¼ x 26½" manila calendered tag board at 5.94 cents per pound, bids for which were received on March 1.

The Whitaker Paper Company will furnish 2,000 pounds of 24 x 36, 70, in 24" tolls. No. 1 gummed kraft paper at 5.75 cents per pound and the same company will furnish 5,000 sheets of 100 per cent rag white mourning letter paper at $17.00 per M sheets. Bids for these items were received on March 6.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Elizabeth, N. J.—The Wilson-Jones Company, 3300 Franklin boulevard, Chicago, Ill., manufacturer of loose leaf paper stocks and filing systems, binders, etc., has concluded arrangements for purchase of land at Elizabeth, 402 x 824 feet at Bayway and Lidgerwood avenues, fronting on line of Pennsylvania Railroad, and will use for new Eastern branch plant. Plans will be drawn at once for initial unit, to be one-story, 150 x 450 feet, designed to give employment to about 300 persons. It is estimated to cost over $85,000, with equipment. Another unit will be built at a later date. It is expected to have plant ready for occupancy late in the summer. Frederick G. Bevans, superintendent at plant of company at Kansas City, Mo., will be in charge of construction work at new factory.

Brooklyn, N. Y.—The Eastern Folding Box Company, 405 East Fourth street, New York, manufacturer of folding paper boxes and containers, has arranged for lease of two floors in the Robert Gair Building, 1 Main street, Brooklyn, totaling about 42,000 square feet of floor space, and will occupy at early date for new plant. Company will concentrate production at the new location, removing present New York City and Long Island plants to that point. Increased capacity will be carried out.

Covington, Va.—The Industrial Rayon Corporation, West 98th street, Cleveland, Ohio, manufacturer of cellulose rayon products, is having plans completed for construction of additions to branch plant at Covington, consisting of a main three-story production unit, 44 x 58 feet, one-story structure for storage and distributing service, 104 x 220 feet, and two one-story buildings, each about 25 x 30 feet. The expansion program is reported to cost close to $100,000, and will be placed under way at early date. Christian, Schwarberg & Gaede Company, 1836 Euclid avenue, Cleveland, are architects. Company has begun the construction of new additions to main mill at Cleveland, recently reported in these columns, comprising two wing extensions, estimated to cost over $75,000, with equipment. The same architects prepared plans for the work. Hiram S. Rivitz is president.

Munising, Mich.—The Munising Paper Company has contracted with interests in Alger County for a quantity of pulpwood, totaling about 10,000 cords of spruce. The stock will be cut this week, peeled in the spring and delivered to the mill in the early months following.

Trenton, N. J.—The Agasote Millboard Company, Fernwood road, Agasote, Trenton, has increased operations at local mill, giving employment to about 140 persons on a day and night schedule. It is proposed to hold to this full production basis for some time to come.

Hopewell, Va.—The Hummel-Foley Corporation has been organized by interests identified with the Hummel-Ross Fibre Corporation, operating a local mill, including Fred E. Hummel, to manufacture fibre products of various kinds. The new organization will begin operations at once, it is said, with capital of $25,000.

Indianapolis, Ind.—The Crown Paper Box Company, Murphy Building, manufacturer of paper boxes and containers, has arranged for an increase in capital to $75,000, for general expansion.

Adams, Mass.—Following recent reorganization of the Eaton Paper Company, Inc., the local mill of the company has been leased to Henry J. Guild, general manager, and will be operated in the future by Mr. Guild and associates for the production of fine papers. A minority stock interest in the Eaton company has been acquired by the Western Tablet & Stationery Company, Dayton, Ohio.

Newark, N. J.—The Progressive Paper Box Company, 341 Jelliff avenue, has secured some heavy orders for cardboard boxes, particularly for jig-saw puzzle service, and is now running on an increased production schedule. Output of boxes is averaging about 400,000 such units a week. The company has recently started a department for the manufacture of jig-saw puzzles, as well, with a capacity of about 20,000 weekly. The plant is operating on a full time weekly basis.

Indianapolis, Ind.—The Indianapolis Paper Can and Tube Company has arranged for a change of company name to the Indianapolis Paper Container Company.

Niagara Falls, N. Y.—The Kimberly-Clark Corporation is running on a capacity basis at its local mill, with full working force in all departments, and will hold to this schedule for some time to come.

Edmonton, Alta.—Guild & Barron, Ltd., recently organized, are considering the early establishment of a local mill for the production of strawboard products. Initial unit is reported to cost close to $60,000, including equipment. R. A. Barron is general manager.

Sault Ste. Marie, Ont.—The Abitibi Power & Paper Company, Ltd., is said to be planning installation of additional power equipment at local mill, including a new 9000-horsepower boiler and accessories. Headquarters of company are at Toronto, Ont.

Lowestoft, England—The Alliance Artificial Silk, Ltd., Lowestoft, manufacture of viscose rayon products, is planning for a new capital issue of about 300,000 pounds ($1,038,000), a considerable portion of the fund to be used for an expansion program, including addition to acetate plant and installation of additional equipment.

New Companies

Brooklyn, N. Y.—The National Eagle Paper Box Company, Inc., has been incorporated with capital of $20,000, to manufacture paper boxes and containers. The new company is headed by Isidor and Max Katz, 1742 President street, Brooklyn.

New York Trade Jottings

Champion Envelope Manufacturing Company has been incorporated under the laws of the State of New York, with a capital stock of $75,000.

* * *

Frederick J. H. Kracke has sent to President Roosevelt his resignation as Appraiser of the Port of New York, a post which he has held since 1921.

* * *

Metropolitan Paper Products Corporation has been chartered under the laws of New York State, with a capital stock of 200 shares, no par value.

* * *

Westbrooke Steele, executive secretary of the Institute of Paper Chemistry, affiliated with Lawrence College, Appleton, Wis., is a New York visitor this week.

* * *

Fox River Paper Company, of Appleton, Wis., has just brought out a new paper, known as Opaque New Era Bond, which may be obtained in the New York territory from George W. Miller & Co., and Henry Lindenmeyr & Sons.

* * *

Charles J. Browne, commerce and traffic counsellor, of 27 William street, has acquired larger offices at 62 William street, where he has leased space of 1,200 square feet, and where he will inaugurate on April 1 the various service bureaus he intends to operate.

* * *

Thomas J. Burke, secretary of The Sulphite Institute, with headquarters at 370 Lexington avenue, New York, is receiving congratulations because his elder son, Thomas Burke, Jr. has just been voted the best athlete in the Senior Class at Hotchkiss School, Lakeville, Connecticut. With his younger brother Jim, Tom is a member of the swimming team, which has had a very successful season, besides being Captain of the Track team.

* * *

R. S. Kellogg, secretary of the News Print Service Bureau, was the guest speaker at the regular weekly luncheon and meeting of the Eastern Division of the Salesmen's Association, held at the Hotel Roosevelt, New York, on Monday last. Mr. Kellogg's topic was "White Papers from Southern Pine." He described the work that had already been accomplished by the Research Division of the Georgia Department of Forestry and Geological Development, at Savannah, under the direction of Dr. Charles H. Herty, and discussed the problems that still had to be solved. Mr. Kellogg was accorded a hearty vote of thanks by all present at the close of his interesting address.

Sacandaga Reservoir Tax Levies

GLENS FALLS, N. Y., March 20, 1933—Concerns in Saratoga County are levied a total of $525,840.80 in the eighth annual installment payment for the construction of the Sacandaga Reservoir which has already proved of great benefit to paper mills in this section. Tax levies this year are as follows:

Town of Moreau—International Paper Company, $20,376,06, $24,038.40 and $7,278; Union Bag and Paper Company, $29,681. Town of Stillwater—West Virginia Pulp and Paper Company, $10,818.81. Town of Northumberland—Fort Miller Pulp and Paper Company, $6,147.22. Town of Corinth—International Paper Company, $84,417.28; and Warren Curtis Manufacturing Company, $29,054.04. City of Mechanicville—West Virginia Pulp and Paper Company, $11,399.89. Town of Hadley—Estate of Warren Curtis, $32,777.

New York, N. Y.—The Hamilton Scott Industries, Inc., has been incorporated with capital of $10,000, to manufacture paper products of various kinds. J. Hamilton Scott, 577 Ishamstreet, New York, heads the new company. Francis Hight, Ridgewood, N. J., is one of the incorporators.

Boston, Mass.—The Sealing Tape Corporation has been incorporated with a capital of 500 shares of stock, no par value, to manufacture adhesive paper tape and allied paper goods. Isaac Levin, 15 William street, Bellows Falls, Vt., is president and treasurer.

New York, N. Y.—The Champion Envelope Manufacturing Company, Inc., has been incorporated with a capital of $75,000, to operate a local paper converting plant for the manufacture of envelopes and kindred specialties. New company is represented by Benjamin Hart, 38 Park Row, New York, an attorney.

Buffalo, N. Y.—The Marine Paper Stock Company, Inc., has been incorporated with a capital of $10,000, to deal in paper stocks, including waste paper. The incorporators include Benjamin D. Reisman, 64 Winston road and Claude V. Kister, 915 Delaware avenue, both Buffalo.

Wilmington, Del.—The Reed Company, Inc., care of the Corporation Trust Company, Industrial Trust Building, Wilmington, has been incorporated under state laws with capital of $1,000,000, to manufacture paper boxes, containers and packages of all kinds.

Brooklyn, N. Y.—The Fibre Specialty Corporation has been incorporated with a capital of 100 shares of stock, no par value, to manufacture fiber and paper specialties. New company is represented by London, Guzik & London, 302 Broadway, New York, attorneys.

New York, N. Y.—The Compania Argentina De Productos De Papel, Inc., has been incorporated under Delaware laws with capital of $25,000, to deal in paper products of various kinds. The incorporators are Richard H. Proctor, Pelham, N. Y.; Orchibald Carswell, Bronxville, N. Y.; and Clayton W. Beach, Kew Gardens, N. Y.

New York, N. Y.—The Stuyvesant Paper & Supply Corporation has been incorporated with a capital of $10,000, to deal in paper goods of different kinds. The new company is represented by Morris H. Hofstadter, 15 Park Row, New York, attorney.

Otsego, Mich.—The Otsego Waxed Paper Company, Otsego, has filed a voluntary petition in bankruptcy, listing liabilities at $146,655 and assets, $145,261.

Union Bag Taxes Refunded

HUDSON FALLS, N. L., March 20, 1933—Announcement was made this week by village authorities that they had decided to make a refund of $2,500 to the Union Bag and Paper Power Corporation for alleged excessive taxes paid in 1932. It is understood that this settlement will terminate the certiorari proceedings instituted against the village several months ago in an effort to secure a review of assessments placed on the property owned by the corporation. The terms of the settlement were reached at a conference this week between representatives of both sides and it is believed that village officials will now file notice with the county clerk seeking the disposal of the court action. The assessment on the property was recently lowered forty per cent following an expert appraisal but the company refused to relinquish its certiorari writ until its terms were agreed upon satisfactorily. Valuations of other concerns connected with the paper industry also show a substantial reduction in the new budget.

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OPTIMISM

Fear! Confidence! Optimism! As the intensely interesting drama was unfolded at Washington during the past two weeks, these psychological phases rapidly succeeded one another. When the various remedial measures for meeting the crisis were put into effect under the courageous leadership of the President with the cooperation of Congress, it was early apparent that the country was sold on the character of the leadership being displayed and the confidence in the ability of the administration to meet the crisis has now been succeeded by a general feeling of optimism that the bottom of the depression has been reached and that the recovery will be increasingly apparent as time goes along. This optimism is restrained, it is true, but it is genuine nevertheless and is so general throughout the country that it cannot fail to have a salutory effect of great importance.

Steps in the endeavor looking toward economic recovery continue rapidly to be shaped. On Monday the President signed into law the economy bill empowering him to revise veteran's compensations and government salaries. With this weapon he intends to lop off about $500,000,000 from Federal expenses. He had his aids already busy preparing the new schedule of salaries and veterans' allowances, and expected to put these into effect before the next pay day comes along on April 1.

A minimum saving of $250,000,000 through reduced veterans' compensations and $100,000,000 in lowered salaries is contemplated in the administration moves to get the budget balanced within a year. Another hundred million or more in savings is expected from reorganization and abolition of Government agencies.

This is the second of the emergency measures to be signed by the President, and the third one, the revision of the Volstead Act, to allow the brewing of beer of 3.2 alcoholic content will probably be made into law before this appears in print. This, it is expected, will provide revenue of from $125,000,000 to $150,000,000 and what is equally important, work for hundreds of thousands of men. It will directly benefit the paper industry because large quantities of board and paper will be needed for packaging material. Millions of labels will be needed on bottles and packages which also will consume considerable quantities of paper. Brewers before prohibition were important advertisers in the daily papers and the popular periodicals. If this advertising is resumed, as it is likely, it will obviously be an important factor in increasing the consumption of paper.

A tangible evidence of just how beneficial this new legislation may be expected to be to the paper industry is provided by the following dispatch from Kalamazoo, Michigan, one of the great paper centers of the country, which the PAPER TRADE JOURNAL has just received from its correspondent in that section:

"Two Kalamazoo paper mills busy on paper for beer labels and one figuring on contracts for cartons is the way paper mills in this section were drawn into the swirl of the encouraging 'new deal' whirlwind in national politics.

"The return of legalized beer already has resulted in several large orders being received by the Kalamazoo valley paper mills, with evidence of further business to follow. The paper is to be used for the manufacture of labels.

"All the mills recently have received requests for quotations on lithograph stock. One mill received orders for four carloads of lithograph paper within three days. Another reports substantial orders for label paper.

"Kalamazoo, in close proximity to the big breweries of St. Louis, Chicago and Milwaukee, is in a position to secure a large share of the business created by the new law.

"After it has been definitely settled just how the business will be handled in the different states, local manufacturers of cartons also expect to obtain large orders. One concern already has discussed the proposition of furnishing cartons for bottles with several of the larger breweries."

Under the influence of these various favorable factors, the tone of the paper market has perceptibly improved. Except in a few instances, quotations have not yet advanced, but such action is not unlikely soon. However, the many evidences of cut-throat competition only recently widely indulged in have largely disappeared and the mills are disinclined to accept orders very far ahead at present prices.

It may be seen, therefore, that the general optimism regarding the future is distinctly shared by the paper industry.

Improvement is not expected to be rapid, but it is believed that the tide has definitely turned and that progress from now on will be made in the right direction.

Converted Paper Products, 1931

WASHINGTON, D. C., March 15, 1933.—The Bureau of the Census announces the publication of a special report on the manufacture of converted paper products in 1931, compiled from returns received at the biennial census of manufactures taken in 1932. This report covers the output of converted paper products made in the following-named industries: Bags, paper, exclusive of those made in paper mills; boxes, paper, not elsewhere classified; cardboard, not made in paper mills; card cutting and designing; envelopes; wall paper; paper goods not elsewhere classified.

The values of the several classes of converted paper goods made as secondary products by establishments classified in other industries are also included.

The total value of converted paper products manufactured in 1931 amounted to $633,800,932, a decrease of 22.4 per cent as compared with $816,367,083 (value of manufacturers' sales) reported for 1929, the last preceding census year.

The figures in this table cover the output (actual production in 1931 and shipments or deliveries by manufacturers in 1929) of the specified commodities, so far as separately reported to the Bureau of the Census, both by those manufacturers who made them as primary products and by those who made them as secondary products.

February News Print Production

Production of news print in Canada, February, 1933, amounted to 125,610 tons and shipments to 120,916 tons according to the News Print Service Bureau. Production in the United States was 67,085 tons and shipments 67,057 tons, making a total United States and Canadian news print production of 192,695 tons and shipments of 187,973 tons. During February, 17,474 tons of news print were made in Newfoundland and 1,132 tons in Mexico, so that the total North American production for the month amounted to 211,301 tons.

The Canadian mills produced 56,433 tons less in the first two months of 1933 than in the first two months of 1932 ,which was a decrease of 17 per cent. The output in the United States was 40,487 tons or 22 per cent less than for the first two months of 1932, in Newfoundland 5,241 tons or 12 per cent less, and in Mexico 261 tons more, making a decrease of 101,900 tons or 18 per cent.

Stocks of news print paper at Canadian mills are figured at 54,515 tons at the end of February and at United States mills 23,363 tons, making a combined total of 77,878 tons compared with 73,156 tons on January 31, 1933. The small increase in stocks during January and February was due to accumulation of tonnage to be shipped later by water.

Hazen Paper Co. Files Annual Report

The Hazen Paper Company of Holyoke, Mass., has filed the following report for the year ending Dec. 31. Assets—Cash $2,878, accounts receivable from customers $6,851, merchandise $8,664, supplies $58, commissions receivable $339, machinery and equipment $18,684, copper rolls $944, engravings $4,811, furniture and fixtures $1,288, prepaid items $247, patent rights, etc. $2, cash value life insurance $470. Liabilities—Accounts payable $3,788 notes and acceptances payable $6,577, reserve for depreciation $7,676, reserve for bad debts $500, capital stock $23,400, surplus $3,179, accrued interest $178.

Two Large Bag Machines Completed

WATERTOWN, N. Y., March 20, 1933.—A contract calling for two of the largest paper bag machines in the world has been completed here by the Coty Machine Company. A large force has been kept busy for the past several months on these orders and considerable overtime work was also observed in order to fill requirements on schedule. The machines are of the half barrel combination multi-wall valve bag kind. A demonstration of one of the machines was made to the agents of the San Rafael Paper Company, Mexico City, prior to shipment to that country late in February while the other machine is to be consigned to the Adams Bag Company, of Chagrin, Ohio, within the next few weeks. The latter order is being made ready for shipment. It was learned that representatives of a number of leading paper bag manufacturing concerns in this country are planning to inspect the machine before it is shipped.

Each machine is 110 feet in length with a weight of over fifty tons. They represent the finest in completeness of design and embody the ultimate in regards to adjustments, automatic controls, etc. Among the most important features in the design of each is the elimination of jams so characteristic of other machines. Ejecting principles are located at strategic points for the disposition of imperfect bags, thereby greatly aiding in the inspection and handling of uniform perfect bags.

An entirely new principle has been brought out in the pasting operations to insure perfect application which is so necessary in pasted bags. The machines are constructed so as to handle a variety of sizes, the largest being bags 25 by 50 inches and the smallest 15 by 28 inches. Each is adapted for the making of bags for numerous products and because of the large sizes possible it is believed that new markets will be developed. The speed of each machine is 110 complete bags a minute and one continuous run of 24 hours on cement bags would result in the conversion of about thirty tons of paper. This large tonnage is understood to have made the machines especially attractive to numerous concerns in the manufacturing field.

Saranac River Claim Reviewed

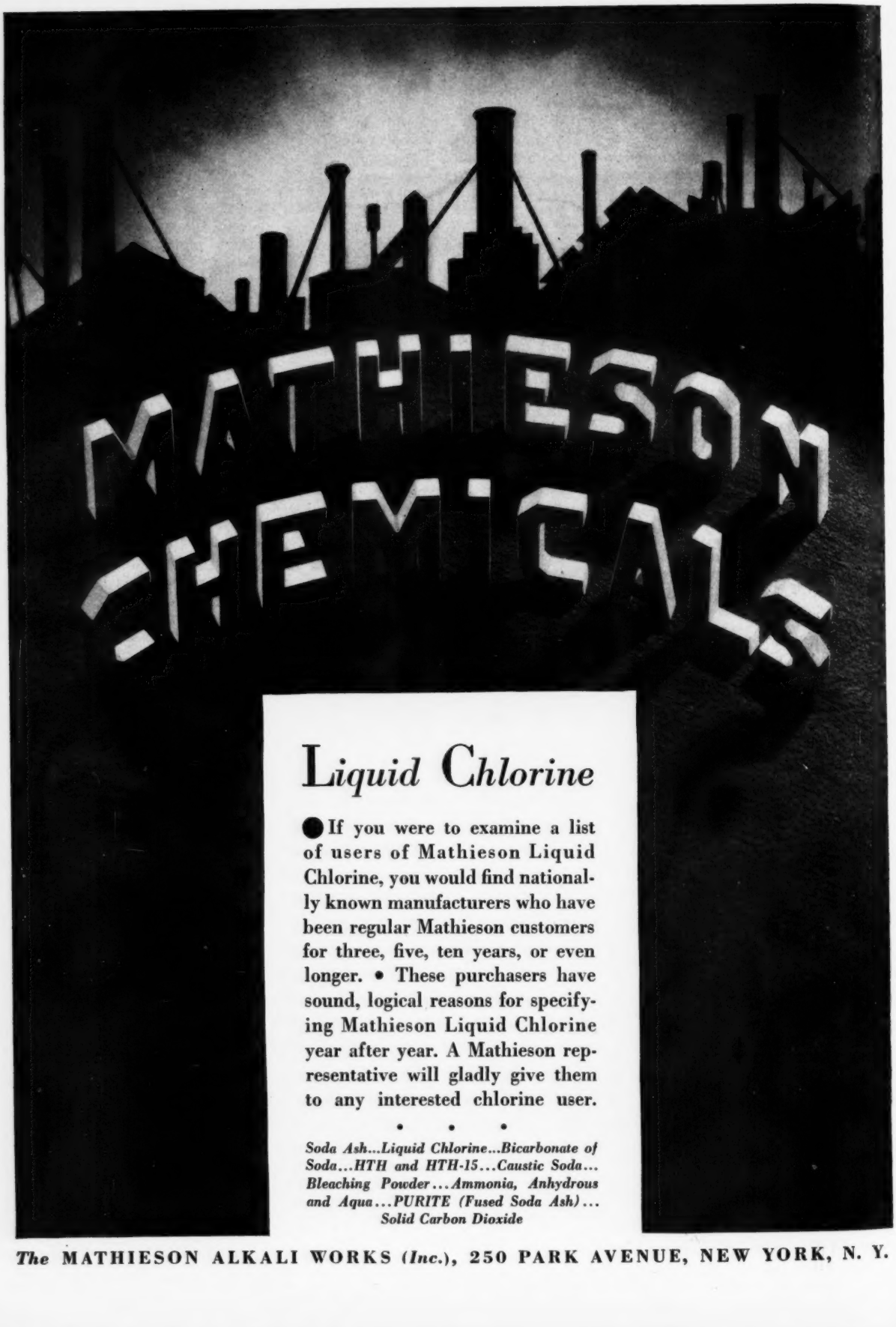
[FROM OUR REGULAR CORRESPONDENT]

SYRACUSE, N. Y., March 20, 1933—A rejected claim of the Saranac River Power Corporation for $1,500,000 against the defunct Saranac Lake Pulp and Paper Company was reviewed this week at a hearing in Federal Court before Judge Bryant. The large claim is for alleged breach of two contracts made between the concerns and was filed at a bankruptcy hearing before William P. Badger, referee, of Malone, but rejected.

John F. White, trustee in bankruptcy, presented his report for confirmation also and the power company renewed its plea for inclusion of its claims in the list of liabilities of the defunct concern. A decision is expected within a few days as Judge Bryant announced that he would give the matter immediate consideration.

Paper Mill Reopened for Federal Order

PITTSFIELD, March 20, 1933—Crane & Co.'s old Berkshire mill in Dalton, idle for two years, started the manufacture of note paper last week for the government. The company has received notice from the government to be prepared to meet extra orders on note paper, and indications are that this work will mean operation of the mill for five weeks.



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Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

The National Research Council, 21st and B Street, Washington, D. C., through Dr. Clarence J. West, extends the courtesy of its photostat service to members of the Technical Association of the Pulp and Paper Industry. Owing to a limitation of personnel and time, this service cannot be extended to non-members.

The charge for the photostat service is: 9 x 11 inches—18 cents per page, 18 x 11 inches—35 cents per page, 22 x 18 inches—70 cents per page, minimum charge, 50 cents.

Payment should be made upon receipt of invoice.

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Special Papers

Phenol-Formaldehyde Resin Sheets. George J. Crossman assignor to Panelyte Corp. U. S. pat. 1,868,566 (July 26, 1932).—A collodial paste formed from finely divided mica and water is added to paper stock, sheets are formed from the mixtures, and the sheets are impregnated with phenol-formaldehyde resin varnish and then subjected to heat and pressure. The product is suitable for electric insulation.—A. P.-C.

Mulch Paper for Agricultural Use. William A. Hall. U. S. pat. 1,870,110 (Aug. 2, 1932).—A mulch paper is formed of 40 per cent absorbent cellulose paper material, 30 per cent decomposable weatherproofing agents such as "wood wax," and 30 per cent fertilizer material such as nitrogen, potassium and phosphorus compounds.—A. P.-C.

Artificial Leather Manufacture. Roger B. Hill assignor to Brown Co. U. S. pat. 1,870,567 (Aug. 9, 1932).—A paper web is impregnated with water-dispersed rubber, dried, impregnated with water containing about 1 per cent of a vegetable agent of the type of oak extract, or the like, and again dried.—A. P.-C.

Method of Making Layers of Distended Fibrous Material. Frank L. Bryant assignor to Cellufoam Corp. U. S. pat. 1,870,279 (Aug. 9, 1932).—Bubble- or film-forming ingredients, such as starch, dextrin, albumen, saponin, etc., are added to paper stock. The mass is subjected to agitation by a special form of agitating blades designed so as to give the mass a swift vortical movement having a centrifugal component and downwardly directed component, which are directed to impart a surging in and out movement to the mass until the latter assumes a creamy consistency and becomes distended to two or three times its original volume. It is then discharged in the form of a sheet 1 to 1.5 inches thick on to a fourdrinier wire, where part of the water is removed by drainage and light suction. Drying is completed by passing the sheet through a long drying chamber, through which it is carried on another endless woven wire cloth. Absorbent material, such as fabric or waterleaf paper, may be interposed between the sheet and the drier wire.—A. P.-C.

Process of and Apparatus for Continuously Forming a Bias Corrugated Strip. Charles L. Tumulty and Forrest H. Tumulty. U. S. pat. 1,870,473 (Aug. 9, 1932).—The invention is an improvement upon the Amesbury patent 1,051,660, of January 28, 1913, the improvement consisting in the angular presentation of the material to the corrugating rolls, the angle of inclination of the corrugation being materially less than 45°.—A. P.-C.

Reinforced Paper. Norman S. Stone and Robert L. Burns assignors to Mosinee Paper Mills Co. U. S. pat. 1,870,267 (Aug. 9, 1932).—The paper is reinforced by means of strands of paper, manila, jute, sisal, etc., which are laid transversely of the machine direction during the formation of the sheet on the wire. The strands are led into the stock in the head box. The latter is provided with a roll, the surface of which is provided with longitudinal slots. The roll lies just back of the slice and over the apron, and its position is adjustable to regulate its clearance from the slice and apron. The strands pass under the roll, while most of the stock must pass through the slots in the roll before passing on to the wire.—A. P.-C.

Clouded Paper. I. G. Farbenindustrie A. G. Fr. pat. 725,069.—A solution containing 12 parts nitrocellulose in 25 parts normal butyl acetate, 10 parts normal butanol, 40 parts toluene, 1 part glyceryl rosin ester, 1.3 parts tricresyl phosphate and 1.3 parts castor oil is colored by means of a vat dyestuff such as indanthrene red BN, which is introduced through a nozzle into a bath containing an aqueous solution of Turkey red oil. The mixture is incorporated with the pulp which is then made into paper.—A. P.-C.

Composite Material and Process of Making the Same. Emil C. Loetscher. U. S. pat. 1,875,054 (Aug. 30, 1932).—A sheet of base material composed of a partially compressed mass of cellulosic pulp is coated with a resinous

varnish and dried to provide a tacky surface. A thin layer of pulverized fibrous material is applied over the surface; the sheet is subjected to heat and pressure; a solution of a phenol-condensation product is applied over the surface of the treated sheet, and the latter is again subjected to heat sufficient to render the phenol-condensation product hard and infusible.—A. P.-C.

Laminated Tubular Structure. Charles L. Keller assignor to The Richardson Co. U. S. pat. 1,878,452 (Sept. 20, 1932).—Layers of felted bituminous pulp are wound spirally and cemented with additional bitumen, and the structure is coated on the outside with bitumen.—A. P.-C.

Process for Making Articles of Fibrous Materials. Emil C. Loetscher. U. S. pat. 1,867,575 (July 19, 1932).—A mat of pulp is formed with portions of varying thicknesses and of substantially greater thickness and less density than the finished article; the mat is coated with a resinous varnish and allowed to dry. The mat is covered with a number of sheets of paper coated with a resinous substance and having an intermediate layer of a dry mixture of pulverized resinous substance and cellulose fiber, and the whole is compressed between heated dies to reduce it to the final thickness and surface contour.—A. P.-C.

Moldable Composition. John Mursch assignor to Joseph Gatti. U. S. pats. 1,869,490 and 1,869,491 (Aug. 2, 1932).—*No. 1,869,490*—Finely divided dry fiber such as paper or rag material is mixed with cresylic acid, formaldehyde and caustic soda in the presence of water, the mixture is boiled to form synthetic resin and the plastic and dough-like product is cured. *No. 1,869,491* relates to details of a process for forming sheets from fibrous material and synthetic resin.—A. P.-C.

Moldable Synthetic Resin Composition. H. L. Bender assignor to Bakelite Corp. Brit. pat. 349,521 (Feb. 28, 1929).—A fibrous filler such as paper is impregnated with a reactive phenolic resinoid comprising residual amounts of a methylene-containing agent and a non-phenolic ingredient such as urea to react together. A white pigment such as titanius oxide, etc., may be added. Sheets of paper thus treated may be dried at 100° to 120° C. and pressed under high pressure at 150° to 170° C.—A. P.-C.

Process and Machine for Producing Wadding Material. Austin E. Cofrin. U. S. pat. 1,874,451 (Aug. 30, 1932).—A substantially dry sheet of material of indefinite length is gathered into a loose-rope-like mass of indefinite length and is then loosely compacted to a size desired for use.—A. P.-C.

Process of Making Wood Fiber Insulating Material. Paul G. von Hildebrandt assignor to Howard B. Salkeld. U. S. pat. 1,872,533 (Aug. 16, 1932).—Fibrous pulp is uniformly suspended in water in a closed perforated die mounted on the platen of a hydraulic press. Preferably the suspension of fiber does not entirely fill the die, and air is forced into the die under pressure before compacting by means of the press is started. After the press is started, the air is retained in the die until a predetermined pressure has been built up, when outlet valves are automatically opened to permit its escape.—A. P.-C.

Bituminous Emulsion for Roofing Papers. Lester Kirschbraun assignor to The Flintkote Co. U. S. pat. 1,869,697 (Aug. 2, 1932).—A bitumen normally nonliquid at atmospheric temperature is emulsified in an aqueous vehicle with an argillaceous emulsifying agent. Tannic acid is added to stabilize the emulsion against sedimentation.—A. P.-C.

Paper Lath. Walter D. Jarvis assignor to Mary Haines Marks. U. S. pat. 1,872,957 (Aug. 23, 1932).—A paper lath comprises a paper backing sheet formed with longitudinal corrugations. Individual bridge members extend transversely of the corrugations and secure the bridge members to the sheet, each staple spanning a corrugation and entering the sheet beyond each side of the latter so as to preserve the shape of the corrugations.—A. P.-C.

Apparatus for Forming Sheets of Roofing Stock. Harry E. Holcomb assignor to Fiberfraks Inc. U. S. pat. 1,869,148 (July 26, 1932).—Two cylinder molds are mounted in a common vat and an endless woven wire belt is trained around each cylinder. A sheet is formed on each wire and the two sheets are brought together between the two wires, given a first pressing by means of a couch roll resting on one of the cylinders and passed through a press before being released from between the wires. A single cylinder mold may be used, but with two wires, between which the sheet is carried till it has gone through the press.—A. P.-C.

The Efficient Drying of Paper. Anon. Paper Maker & Brit. Paper Trade J. International No.: 32-33 (1932).—A brief discussion of the V. J. B. three-stage steam circulation heating system for paper machine driers.—A. P.-C.

Sectional Paper Machine Drives. R. H. Rogers. Paper Mill 55, No. 30: 3, 7 (July 23, 1932).—A brief discussion showing the merits of the multiple-generator system of paper machine drive and of the Selsyn control of speed regulation and draws between the sections.—A. P.-C.

Edge Protection for Fiber Boards. Jerome T. Card assignor to Masonite Corp. U. S. pat. 1,880,785 (Oct. 4, 1932).—The edges of a sheet formed of disintegrated wood fiber are bound by a thin pliable coating of metal foil intimately held thereto by an asphalt cementing.—A. P.-C.

Decalcomania (Transfer) Paper for Offset Printing. F. B. Dehn assignee of Decorative Development, Inc. Brit. pat. 374,519 (March 13, 1931).—The body paper is coated first with a water-soluble coating (starch, gum, etc.) and then with a water-insoluble coating (cellulose acetate or nitrate) containing a drier (cobalt or maganese linoleate) and a finely divided filler. Suitable (lacquer type) formulae are given for the water-insoluble coating.—A. P.-C.

Roll Coaters vs. Brush Coaters. Frank W. Egan. Paper Trade J. 95, No. 12: 36-38 (Sept. 22, 1932).—A discussion of the advantages of roll coaters over brush coaters for coating papers with clay coatings.—A. P.-C.

Nitrocellulose Lacquer for the Paper Industry. Otto Merz. Nitrocellulose 3: 104-105 (1932).—A few lacquer compositions for coating paper are given.—A. P.-C.

Carbon Paper. A. D. Denonne. Belg. pat. 384,840 (Jan. 30, 1932).—Carbon paper is rendered rigid, *e. g.*, by pasting on a sheet of ordinary paper, so that it can be handled in one hand without folding over. The sheet of ordinary paper may extend beyond the carbon paper so that the latter may be handled without soiling the fingers.—A. P.-C.

Manufacture of Compound Papers and Pasteboards Impregnated with Caoutchouc. V. Antoine. Brit. pat. 375,157 (Sept. 30, 1931).—A solution of caoutchouc is introduced between two or more thin webs of paper or pasteboard which are then passed between pressure rolls; caoutchouc solution is afterwards circulated through the composite material by pressure and (or) suction.—A.P.-C.

Paper. I. G. Farbenindustrie A. G. Fr. pat. 726,619 (Nov. 21, 1931).—Novel effects are obtained on paper by adding to the sheet, colored or not, which is on the wire near the slice, solutions of cellulose derivatives, colored or not, dissolved in organic solvents. The solutions are added in the form of drops or jets and the sheet is afterwards subjected to the usual treatments.—A.P.-C.

Aluminate Size*

By J. J. Healy, Jr.[1] and C. P. Dyer[2]

Abstract

The rosin sizing of paper at high pHs and low acidities may be successfully accomplished by regulating the total alumina present. This regulation is most efficiently carried out by the substitution of combinations of alum and sodium aluminate for the alum ordinarily used. Such combinations permit a greater flexibility in the sizing operation.

Definition

Aluminate size (*1*) is a modification of the regular procedure of sizing by means of rosin and alum which permits variations in the total alumina furnished as well as in pH and total acidity by the use of combinations of alum and sodium aluminate.

Theory

The alum-rosin reaction which results in the sizing of paper is generally explained in either one of two different ways:

By one theory it is assumed that the two interact to form insoluble aluminum resinate which is deposited on the fiber and subsequently sintered on the drier to provide an impervious coating. The other assumes that the alum in solution dissociates into sulphuric acid and colloidal alumina, sulphuric acid acting to precipitate the rosin from the size and the colloidal alumina being positively charged acting as a cementing material to bring together the negatively charged cellulose and rosin. Whichever theory is true, practice bears out the idea that the presence of alumina is an essential part of the sizing operation and this alumina must be in excess of that theoretically required for simple reaction with sodium resinate to produce an insoluble aluminum resinate. For instance, we know that other materials have been tried to replace alum such as sulphuric acid, bisulphate of soda, calcium chloride and magnesium sulphate and none of these have had appreciable success. We also know that with a two per cent rosin furnish only .6 per cent alum is required theoretically to interact and produce insoluble aluminum resinate but, in practice, this is not nearly sufficient to bring about good sizing and the figure of 2 per cent alum more nearly represents normal paper mill requirements. It was felt therefore, that if the proper amount of alumina could be provided without the accompanying acidity that follows when using alum, good sizing could be obtained at higher pHs.

It is obvious that alum as such cannot be used to bring about the changes required as its constitution is relatively inflexible. It is true that a basic alum, that is, one containing excess of alumina over that theoretically required by the SO_3 present, can be made, but a 2 per cent basic alum is the highest that can be practicably made commercially and this basicity is not enough to bring about a change of more than 0.2 pH. (*2*) Sodium aluminate is entirely suitable for this purpose, however. It is the opposite of alum in that it is alumina combined with alkali whereas alum is alumina combined with acid and therefore it should react readily with alum to form alumina. It is now commercially available and its alumina and alkali content can be varied to meet different conditions. Theoretically its constitution is $Na_2O\ Al_2O_3$ containing 62.2 per cent alumina and 37.8 per cent Na_2O. Commercially it is available as a 90 to 95 per cent sodium aluminate containing 3 to 5 per cent excess alkali. It is as low in iron as iron-free alum and furthermore the iron which is present is insoluble in the alkaline solution and is readily filtered off. It should be noted that on the basis of alumina content a pound of sodium aluminate is equivalent to somewhat more than three pounds of alum.

Results

The inflexibility of the sizing operation when using rosin and alum alone and the variation in sizing obtained due to variation in alumina present is shown graphically in Fig. 1. It is obvious from the curves shown that decrease in alum in order to bring about increase in pH leads to poor sizing, presumably due to absence of necessary alumina. However, it might be assumed that if the alumina present could be maintained equal to that provided by 2 per cent alum and supplied in such a manner as to control pH then we might be able to maintain sizing at its original value. This can be done with sodium aluminate and moreover, the total alumina present can be increased to any desired alum equivalent. An inspection of the chemical reaction between these two compounds will make this apparent. The equation

$$Al_2(SO_4)_3 + 3Na_2O\ Al_2O_3 = 4Al_2O_3 + 3Na_2SO_4$$

shows that one mol of alum and three mols of sodium aluminate will react to a neutral end point to form four mols of alumina. It is just as true that the same end conditions will obtain if two mols of alum and six mols of sodium aluminate are reacted although in the latter case twice as much (eight mols) of alumina will be formed. It is also true that two mols of alum and two of sodium aluminate will give a different end point but the same original four mols of alumina.

A series of experiments was made in which the amount of rosin was kept constant at 2 per cent of the weight of the pulp and the amounts of alum and sodium aluminate

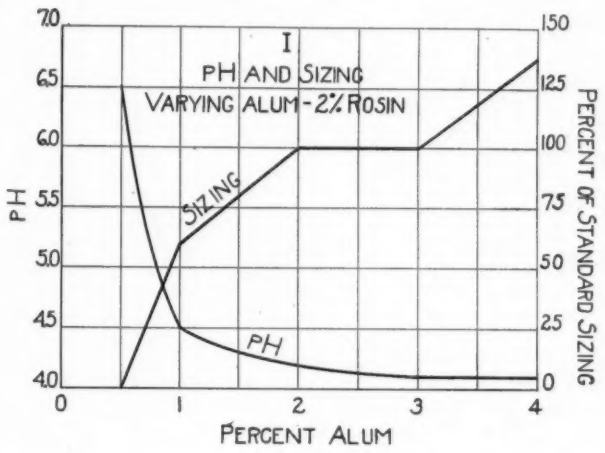

FIG. 1

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933.
Contribution of the TAPPI Preparation of Non-Fibrous Materials Committee.

[1] Member TAPPI, chemical engineer, Merrimac Chemical Company, Inc., Boston, Mass.

[2] Chemical engineer, Merrimac Chemical Company, Inc.

so varied as to cover the entire pH range from 4.2 to 7.0 and at the same time include variations in total alumina at definite pH points along the curve.

Fig. 2 shows how total alumina and pH may be varied. Each line represents the pH obtained when to a constant actual alum furnish, 1, 2, 3, or 4 per cent, various amounts of sodium aluminate are added to give the equivalent alum indicated. The amount of sodium aluminate may be calculated by subtracting the actual alum from the equivalent alum and dividing the remainder by 3. For instance, at pH 6.0 and 2 per cent actual alum, the equivalent alum is 4.4 per cent.

$$\frac{4.4 - 2.0}{3} = 0.8 \text{ per cent sodium aluminate.}$$

TABLE I

VARIATION IN SIZING WITH VARIATION IN ALUMINA AND pH
2 PER CENT ROSIN

pH	Per cent alum	Per cent aluminate	Per cent equivalent alum	Per cent standard sizing
7	1	0.47	2.4	40
	2	1.00	5.0	100
	3	1.5	7.4	103
	4	2.5	11.6	70
6	1	0.45	2.2	80
	2	0.80	4.4	90
	3	1.40	7.0	108
	4	1.90	9.7	90
5.5	1	0.24	1.7	80
	2	0.72	4.2	100
	3	1.30	6.8	90
	4	2.0	9.9	80
4.5	1	...	1.0	80
	2	0.5	3.4	120
	3	0.88	5.7	80
	4	1.44	8.3	70

The work was done in a laboratory beater using Burgess standard sulphite pulp. Pulp was beaten to a definite freeness and chemicals added. Hand sheets were made on a sheet mold and dried at 180 deg. F. Sizing was measured by resistance to Ryto ink penetration. For each point determined two check runs were made as well as a standard run at 2 per cent rosin, 2 per cent alum furnish. The ink penetration results on six sheets were averaged for each run and then the two runs averaged for the final result. The probable error was 5 per cent. Results are shown in Table I and Fig. 3 and indicate that:

1. Normal sizing may be maintained at higher pHs provided sufficient alumina is present.
2. The amount of this alumina has an optimum value and either above or below this value sizing falls off.

Mill runs have been made on boards, rag bonds and sulphite bonds which bear out the validity of these results.

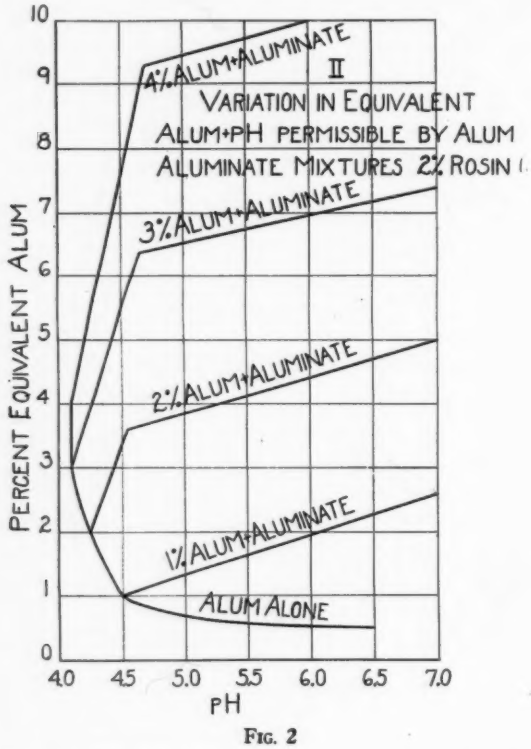

FIG. 2

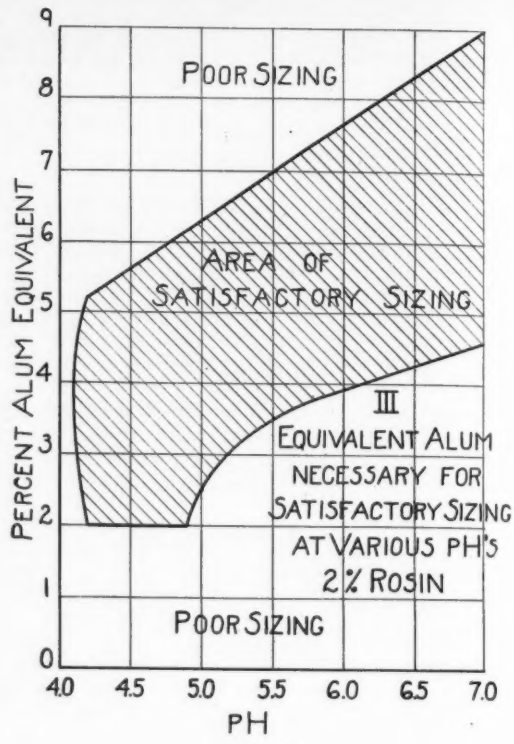

FIG. 3

Advantages

The advantages of sizing at higher pHs and lower acidities are several.

1. More permanent paper results. The Bureau of Standards has stated "the use of excessive amounts of alum, which imparts acidity to paper, markedly decreased the stability of the papers," and offered the following figures (3).

TABLE II

Kind of sizing	pH of paper	Effect of heating for 72 hrs. at 100 deg. C.	
		Per cent retention of folding endurance	Per cent decrease in alpha cellulose
Unsized	6.6	96	0.5
Rosin (2 per cent)	5.5	69	1.4
	3.8	35	6.6
Rosin (½ per cent)	4.9	81	1.1

Our own results, in the case of an all sulphite bond, show that the retention of fold after ageing was increased from 9 per cent at pH of 4.0 to 35 per cent at pH 4.6 and 56 per cent at pH 5.0.

2. The use of this process with certain modifications makes it possible to size paper containing alkaline fillers such as calcium carbonate.

3. It permits certain modifications in color of colored

papers when using dyes which are sensitive to changes in pH.

4. Sizing at higher pHs means better machine conditions. It has been our experience that foam is eliminated. A paper presented before the Technical Section of the Canadian Pulp and Paper Association indicates that less acid conditions should mean longer life for wires (*4*). Felts should be benefited.

5. Where white water is being recirculated proper use of sodium aluminate enables the beating operation to be carried out under much more nearly normal conditions, through the reduction in acidity. Acid water furnished to the beater necessitates a longer time of beating and requires the use of much more than normal amounts of rosin to bring about normal sizing.

Conclusion

The use of this process is recommended to all those interested in sizing at higher pHs. We believe that it represents that most efficient and economical method of introducing greater flexibility into the sizing process.

Acknowledgement

The writers wish to express their appreciation of the assistance given by Miss Helen Kiely and R. W. Pattison of the American Writing Paper Company, Holyoke, Mass.

Literature Cited

[1] Curtis, F. J. U. S. Patent 1,885,185 (Nov. 1, 1932); Can. Patent 327,111 (Oct. 25, 1932).
[2] Kullerud, G. Analysis of Alum by Means of pH Determinations. Paper Trade J. 92, No. 21: 47-48 (May 21, 1932).
[3] U. S. Bureau of Standards, Tech. News Bulletin 171: 81 (July, 1931).
[4] Campbell, J. and Wales, H. G. Study of Fourdrinier Wire Life. Paper Trade J. 86, No. 12: 51-53 (March 22, 1928).

Cooperative Energy Generation*

By Harold A. Lynette[1]

During the past three years many events have occurred which have brought to the industrials serious consideration as to the economic production of their energy generation. The major events may be classified in a simple manner as follows:

First, curtailment in business resulting in every effort to reduce the cost of energy generation for a general reduction in operating expenses.

Second, inactivity of the engineering profession in new construction projects, giving time to obtain better knowledge of operating conditions than was possible during busy periods, and to study past accomplishment in the design, construction and operation of modern energy generating plants.

The production of energy is usually an incidental part of most industrial operations and generally, when industrials are busy, receives secondary consideration as the industrial's principal interest is the manufacture and sale of its own product, and, since with the utility company the manufacture and sale of generated energy is its principal business, it has been able to produce energy at lower cost than the industrial under similar conditions because it has utilized all of the known principles for saving in fuel-consuming devices, and has given constant attention to the experimental work of developing new ideas to be used in future plants. Therefore, under average conditions energy, where possible, should be produced and sold by the utilities rather than produced by the industrials.

Unusual Operating Conditions

Some industrial plants have unusual operating conditions which will allow them, by the use of the same engineering principles that control the design of central station plants, to produce energy cheaper than could be manufactured by the utilities; for instance, plants where a great deal of process steam and hot water is required and the electrical energy is considered a by-product. The process industries provide a potential source for generation of energy in cooperation with the utilities of a lower order of unit costs than can now be secured by either the industrial or the utility in any existing type of energy-generating station using fuel and devoted entirely to their own respective interests.

With the proper cooperation between the process industrials and the utilities it will be possible to construct coordinated energy-generating facilities which will be profitable to both the industrial and the utility.

It is essential in approaching the problems of energy generation for the industrials to request the cooperation of the utility companies in order to work out the best solution for securing the lowest total overall costs to both interests. In effect, this means that present actual operating costs, investment costs, etc. must be set up and mutually agreed to before it is possible to work out a basis of securing lower costs or better service at the same or lower costs from a cooperative generating station. A basis for carrying out the results determined from such cooperative studies should not then be difficult to determine and express in contractual form.

If a process industrial is not satisfied with its present energy generation costs and is considering extensions to its generating plant or the construction of a new plant; or if the utility has under consideration the expansion of its facilities or is able to use additional power, the time is ripe for the industrial and utility to get together and discuss their problem in a very frank manner.

Utilities Underloaded

Utility plants at the present time are unquestionably underloaded in most territories, and the thought naturally arises that the utility has no use for additional capacity but, as studies of generating facilities must be looked at over a period of years in advance of actual use, it would seem unwise for the utility not to be interested in a cooperative plan, as, by adding available capacity to the utility system, it would delay the date of construction for the extension of its own plants; and it would appear that the utility should utilize all of the cooperative capacity available before further expansion of its own generating facilities.

The question of whether the industrial company should own and operate a station selling electric energy to the utility on a firm or dump basis, or should purchase a part of its electrical energy, or whether the utility company should take over the investment in rehabilitation or entirely new construction and sell to the industrial company all of the energy requirements, is a matter which can be decided when all the facts and figures are available.

The question of financing should not be allowed to influence the studies made. This problem is a distinctly separate consideration, and it will be found that even during these times soundly conceived projects of this kind can be financed on favorable terms. Where new gen-

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., February 13-16, 1933. Contribution of the TAPPI Heat and Power Committee.
[1] Consulting engineer, 125 East 46th Street, New York, N. Y.

erating stations are warranted a separate corporate structure can be used, in which case the bonds issued can be properly classified as institutional securities and be rated ahead of similar securities of both the industrial and the utility companies. This arrangement or something similar would overcome the almost impossible plan of dividing the physical property owned by the industrial or the utility as has been proposed from time to time.

No General Plan Possible

No general plan can be outlined for a cooperative plant, each problem requiring a mass of detail to determine a heat balance covering quantities of heat, electrical energy, initial operating steam pressure, superheat, extraction pressures, back pressure, overhead exhaust, etc. as well as the economics of such a heat balance which of course includes first cost and life of the plant and cost of fuel.

Experiences gained in the utility plants within the past few years along with developments now being made in actual practice point to the fact that steam pressures up to 1400 pounds are applicable to any cooperative type of plant. The design, construction and operation of the higher pressure type of plants, as well as the studies preceding such design, should be in the hands of engineers who have had experience with higher pressure utility plants. Probably the best solution to the carrying out of a cooperative plant project would be the design and construction of the plant by engineers familiar with the design of utility plants, in cooperation with consulting engineers of both the industrial and the utility interests, as there must not be any question of fair dealing on the part of either of the contracting parties.

In the interest of economical generation of energy, its distribution, use, measurement and cost are of great importance. The combustion value of a fuel in the generation of energy is measured in B.t.u., and the measure of the performance of a generating station is the number of B.t.u. required from fuel to produce a net unit of output, whether the unit of output is measured in kw.-hrs., pounds of steam, pounds of hot water, or any combination of them.

Heat Balance Essential

A heat balance determination is essential before the duty on a projected generating station can be determined and its performance calculated. Knowing the value of the B.t.u. as a unit of measure, why discard it from there on? If this unit of measure is retained it is possible to simplify all cost allocation in a generating station, and, further, to use it as a unit of measure in the distribution of the products, heat and electric energy. Conversion tables can be readily calculated for the energy output at various station load factors, and for steam and water use at respective pressures and temperatures.

The term "therm" has been accepted by the gas industry in many places as the unit of measure of 100,000 B.t.u. This unit is inconveniently small for use as a unit of measure in our problems; the familiar MM. B.t.u., or one million B.t.u., is best adapted to energy-generating calculations. The term "dekatherm", or ten times a therm, is used in this paper as the unit of measure for one million B.t.u. It is suggested that the adoption of this unit is worthy of consideration by industrial companies requiring the combined use of heat from steam, hot water, and electric energy. Such a unit would simplify all calculations and would prove an excellent unit of measure for the sale of the output of a cooperative generating station designed to supply the heat and electric energy requirements of an industrial plant plus the electric energy supply to a utility company regardless of the ownership of such a station.

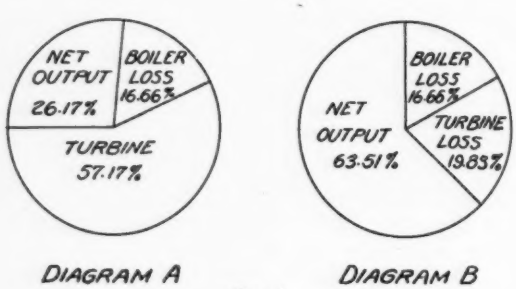

FIG. 1

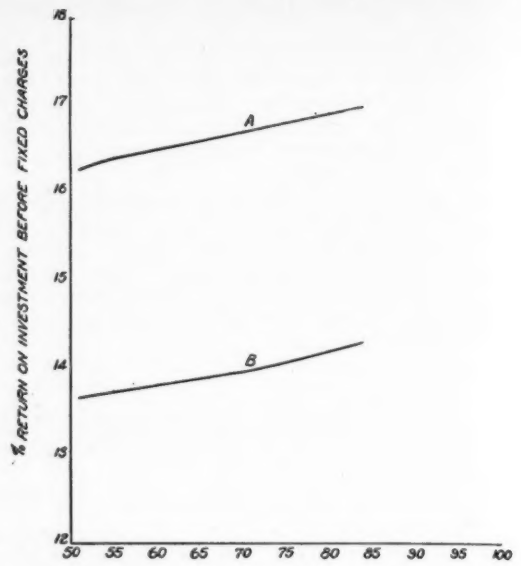

FIG. 2

A—Return on investment with minimum industrial output and varying load factor of generating station. B—Same as A with maximum industrial output.

Thermal Efficiencies

It may be well to show graphically the difference in thermal efficiency between the best performance of a utility station of modern design and that obtained in a station designed to generate energy for utility purposes but with extraction for industrial process and with condensing capacity properly proportioned both to the steam required for process and to the water supply to the mill, which can be utilized as condenser circulating water.

Diagram A shows the major division of losses and resultant thermal efficiency of 26.17 for a utility generating station. Diagram B shows the major division of losses and the resultant thermal efficiency of 63.51 for a cooperative generating station where both stations have the same total steam generating capacity. The installed electric generating capacity of the cooperative-designed station is 80 per cent of the capacity of the straight utility-designed station.

Annual Requirements

The data used in illustrating the principles outlined in this paper are from an actual study of a paper mill conducted with the full cooperation of the utility and paper mill engineers.

The annual requirements of energy for minimum industrial output of paper are shown in Table I on the following page:

Electric energy		40,000,000 kw.-hrs.
Heat dissipated to process:		
Steam at 355° F.	41,060 dekatherms	
Steam at 249° F.	506,940 dekatherms	
Total heat dissipated exclusive of water		548,000 dekatherms
To raise total water (12,741,000,000 lb.) from 55° F. to 70° F.	191,115 dekatherms	
To raise 169,877,520 lb. of water from 70° F. to 157° F.	14,779 dekatherms	
To raise 169,877,520 lb. of water from 157° F. to 190° F.	5,606 dekatherms	
Total heat required for water		211,500 dekatherms
Total heat dissipation to process and water		759,500 dekatherms
Heat return in make-up		3,961 dekatherms
Total heat required from steam		755,539 dekatherms
At 83½ per cent boiler plant efficiency there will be required from fuel		906,646 dekatherms
Addition for idle mill operation		28,250 dekatherms
Total heat dissipation from fuel account of process and idle mill		934,896 dekatherms

The annual requirements of energy for maximum industrial output of paper are as follows:

Electric energy		46,000,000 kw.-hrs.
Heat dissipated to process:		
Steam at 355° F.	53,947 dekatherms	
Steam at 249° F.	666,053 dekatherms	
Total heat dissipated exclusive of water		720,000 dekatherms
To raise total water (16,740,000,000 lb.) from 55° F. to 70° F.	251,100 dekatherms	
To raise 223,200,000 lb. of water from 70° F. to 157° F.	19,418 dekatherms	
To raise 223,200,000 lb. of water from 157° F. to 190° F.	7,366 dekatherms	
Total heat required for water		277,884 dekatherms
Total heat dissipation to process and water		997,884 dekatherms
Heat return in make-up		5,209 dekatherms
Total heat required from steam		992,675 dekatherms

Average Daily Power Demand

Curves A and B on Fig. 1 give the average daily power demand respectively for minimum and maximum annual industrial production.

The average demand ranges from 5,376 kw. to 6,183 kw. with a maximum demand varying from 6500 kw. to 7500 kw.

Based on the above operating data of the mill, studies were made for extending the mill energy generating plant using first operating conditions of 400 pounds and 650 deg. F. and also a plant using steam at 750 pounds and 800 deg. F.

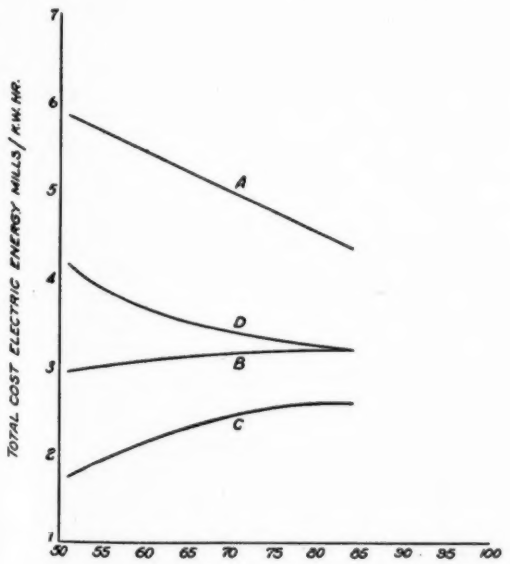

FIG. 3

A—Cost kw.-hr. with industrial not operating. B—Same as A with minimum industrial output. C—Same as A with maximum industrial output. D—Incremental utility per kw.-hr. cost.

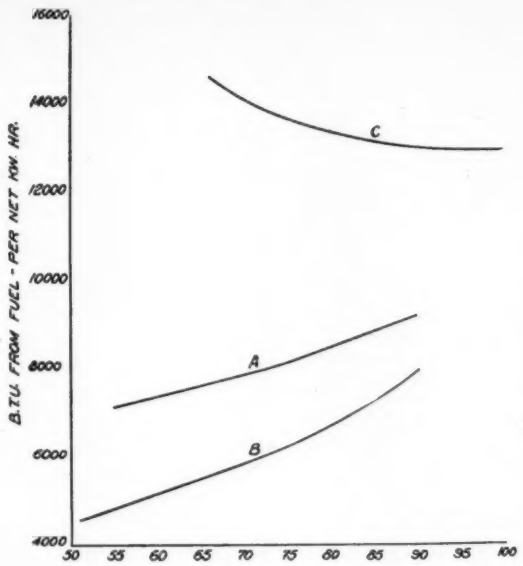

FIG. 4

A—Heat rate B.t.u. per net kw.-hr. delivered to switchboard with minimum industrial output. B—Same as A with maximum industrial output. C—Heat rate B.t.u. per net kw.-hr. D.S. no extraction for industrial process. (Industrial not operating.)

The 400 pound plant provided for a 7500 kva generator whereas, with the same energy supplied to the mill, a 25,000 kva unit was possible with the higher pressure, thereby providing more kw-hr. to the utility and a greater per cent return on the investment.

A summary of the 750 pound, 800 deg. F. plant is shown in Figs. 2, 3 and 4.

Fig. 2 shows the range or return on the investment available for insurance, taxes, depreciation and profit, its load factor on the station varying from 51 to 85 per cent and with industrial output at maximum and minimum.

Fig. 3 shows the cost of power per kw.-hr. plotted against various operating conditions of mill output.

Fig. 4 shows the B.t.u. rate for various conditions of operation of the mill as affected by load factor and mill operation.

Conclusions

Utility companies will hardly be enthusiastic about consideration of cooperation plants at this time with a great deal of generating capacity idle and no immediate need for additional capacity; and industrials may be hesitant about the consideration of remodeling or constructing new plants until business returns to normal. However, there are unquestionably situations where there would be profit to both parties if cooperative plants could be constructed, and it would appear that this is the time for studies and plans to be made for future guidance of the managements of both the industrials and utilities. Each study will probably be an entirely different problem, requiring many detailed figures of process heat, available electric generation and use to the power company, and many phases of the ownership and operation will have to be given consideration.

Therefore, these studies should be made as far as possible in advance of actual consideration of the construction of the plants.

Analysis of the Paulson Process of Evaporation and Combustion of Sulphite Waste Liquor*

By Herbert S. Kimball[1]

Abstract

A mathematical analysis and heat balance calculation is shown for the evaporation and burning of sulphite waste liquor when the Paulson Process is used.

Upon examining my files pertaining to the utilization of waste sulphite liquor, I found an article written in 1924 by Peter A. Paulson of Appleton, Wis., in which he describes what is probably the basis of his present process. In a treatise by H. K. Benson entitled, "Chemical Utilization of Wood," published in November, 1932, by the U. S. Department of Commerce, the Paulson process, as now developed, is explained.

Without going into details it may be stated that the high pressure evaporators, and other parts coming in contact with the liquor, would be constructed of stainless steel. The combustion of the liquid fuel takes place in a Wagner furnace, which supplies the heat for the boiler. The general arrangement is shown in Fig. 1, that of a diagram indicating the flow of steam and liquor. In Fig. 2, the diagram shows graphically the flow of heat.

Mr. Paulson explains in his own analysis how 2,000 gallons of liquor per ton of pulp may be collected, which agrees with other investigators. There seems to be an agreement as to the calorific value of the dry fuel, that of 8,000 B.t.u. per pound. In the work of Webre it is given that liquor of 1.05 s.g. contains 9 per cent of solids and also from the same authority the specific heat of liquor with varying strengths may be obtained. Mills are gradually reducing their steam consumption for cooking to 5,500 pounds or less, per ton of pulp.

This analysis is that of a hypothetical mill with a

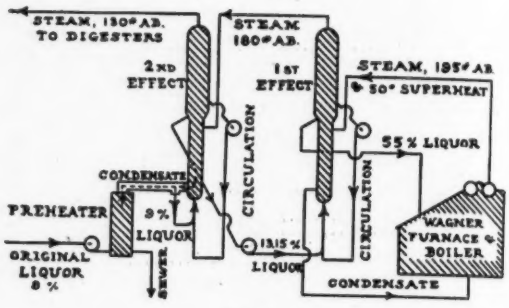

FIG. 1
Diagram of Steam and Liquor Flow.

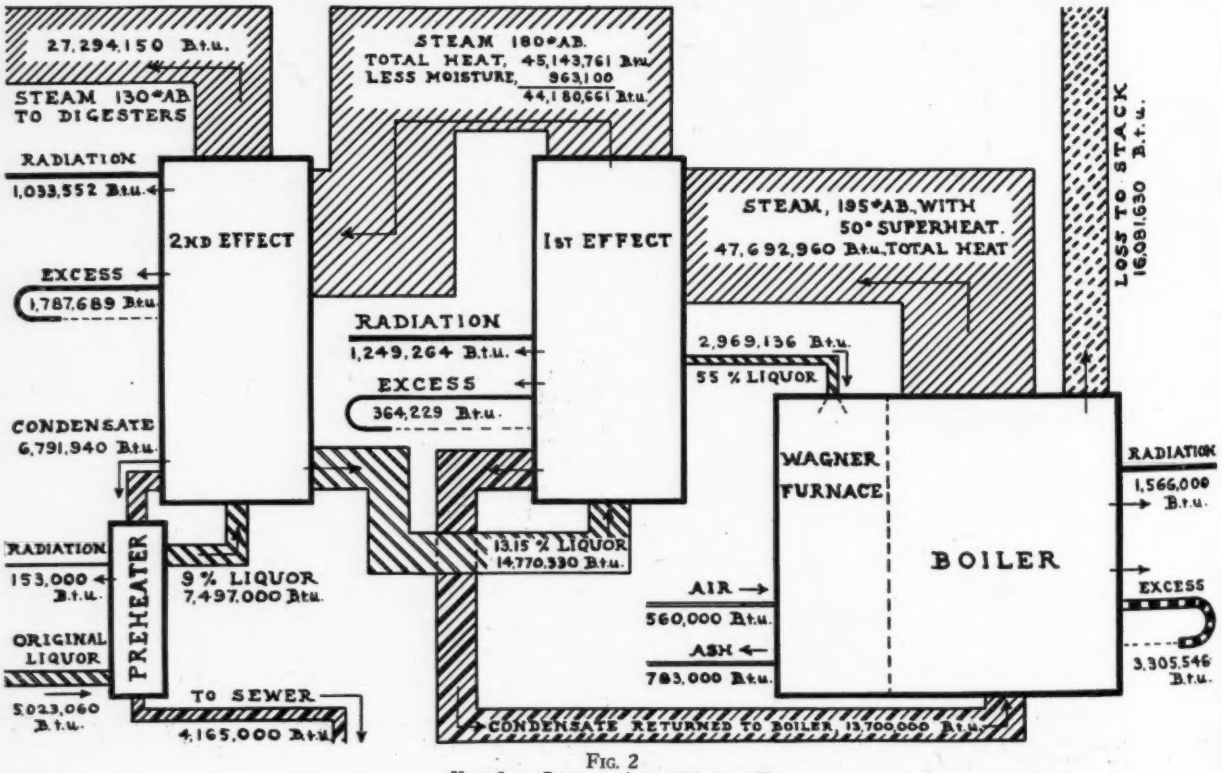

FIG. 2
Heat flow—B.t.u. per hour—100 ton mill.

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capacity of 100 tons of pulp per day and I have intended to make it upon a conservative basis. While I have been guided by Mr. Paulson's data and have made certain assumptions, I believe all such are close to actual conditions.

By examining the heat balances it will be noted that in each case there is excess heat, which insures the fulfillment of the intended operation.

Boiler Performance

As to the performance of the boiler and furnaces, at least an efficiency of 68.7 per cent is shown, and if the excess heat in the fuel, that is given as 4.8 per cent, proves to be available, the efficiency may reach a maximum of 73.5 per cent. However, it may be assumed that Mr. Paulson's figure of 70 per cent may be attained. The evaporation will be 5.94 pounds steam per pound of dry fuel, at 68.7 per cent efficiency, or, 5.35 pounds steam, f. and a., 212 deg. F. The evaporation will be 6.35 pounds steam per pound of dry fuel, at 73.5 per cent efficiency, or, 5.75 pounds steam, f. and a., 212 deg. F. As to the dew point of the waste flue gases passing to the stack, I have calculated it as being about 136 deg. F., indicating that there is no danger of there being any precipitation in the stack, as the temperature of the gases leaving the boiler is 500 deg. F.

From the analysis we see that 1,575 pounds of dry fuel may be recovered per ton of pulp and that its combustion will generate ample steam for the process of cooking in the digesters, namely 5,500 pounds per ton of pulp.

To my mind such an equipment is but another unit in the boiler house and should be directly under the charge of the steam department.

PAULSON'S SULPHITE FUEL PROCESS—(100-ton mill)

LIQUOR COLLECTED: 2000 gal./ton; S. G. = 1.05; then for 100 tons, 2000 × 100 = 200,000 gal./day, or 8,333 gal./hour.

SOLIDS: liquor of 1.05 S. G., contains 9 per cent solids; then, liquor weighs, 8,333 × 8⅓ × 1.05 = 73,000 lb., or (per Paulson) 72,500 lb./hour
If solids 9 per cent, then 72,500 × .09 = ... 6,525 lb./hour

STEAM for COOKING: 5,500 lb. steam/ton of pulp; 100-ton mill, or 4.17 tons/hr. Then, 4.17 × 5,500 = 22,917 lb. of steam/hour for the digesters.

2ND EFFECT: Total liquor entering..... 72,500 lb./hour
Solids, 9 per cent..... 6,525

Water in original liquor..... 65,975
Steam evaporated for digesters..... 22,917

Difference, water to 1st effect..... 43,058
Solids to 1st effect..... 6,525

Total, liquor to 1st effect..... 49,583
The original liquor has now been evaporated down to 13.15 per cent solids.

1ST EFFECT: Water in liquor from 2nd effect..... 43,058 lb./hour
Steam evaporated for 2nd effect..... 37,733

Difference, water remaining..... 5,325
Solids, as before..... 6,525

Total, concentrated liquor to Wagner..... 11,850
The liquor in the 1st effect has now been evaporated down to 55 per cent solids.

WAGNER FURNACE: Water in liquor from 1st effect..... 5,325 lb./hour
Water "flashed" to vapor:
Heat in water at 180 lb. ab. pres..... 345.6 B.t.u.
Heat in water at 212 deg. F..... 180.0

Difference, heat given up/lb..... 165.6
Sp. heat at this strength is .725; then,
(11,850 × 165.6 × .725)/970.4 =.. 1,465

Difference, water remaining..... 3,860
Solids, as before..... 6,525

Concentrated liquor for combustion 10,385 lb./hour
The liquor for combustion now contains 62.83 per cent solids.

PREHEATER: The entering liquor is 104.25 deg. F.; its Sp. Ht. = .955; then, heat brought in, 72,500 × 72.25 × .955 =.... 5,023,060 B.t.u./hour
Heat in condensate from 2nd effect, at 212 deg. F., 37,733 × (212 — 32 = 180) =..... 6,791,940 B.t.u./hour
The equalization temperature will be 142.7 deg. F.
Heat in liquor to 2nd effect, Sp. H. = .955; radiation, drop of 2.2 deg. F., 72,500 × (140.5 — 32 = 108.5) × .955 = ... 7,497,000 B.t.u./hour
Heat to sewer, neglecting radiation loss, 37,733 × (142.7 × 32 = 110.7) = ... 4,165,000 B.t.u./hour

BOILER: Steam required, at 195 lb. ab., with 50 deg. F., superheat:—
Heat in one pound of steam..... 1229.2 B.t.u. } see heat-
Total heat in steam generated/hour..... 47,692,960 B.t.u. } balance
Then, 47,692,960/1229.2 = 38,800 lb. steam/hour.

2ND EFFECT, HEAT BALANCE, PER HOUR

	Supplied B.t.u.	Out-Going B.t.u.
Total heat in 37,733 lb. steam, 180 lb. ab., from 1st effect, 37,733 × 1196.4 =.....45,143,761		
Deduct moisture, 3% lt. ht. =.. 963,100		
	44,180,661	44,180,661	.....
Heat in liquor from preheater,.....	7,497,000	.....
Total heat in 22,917 lb. steam, 130 lb. ab., for digesters, 22,917 × 1191 =.....	.....	27,294,150
Heat in condensate to preheater.....	.....	6,791,940
Heat in 13.15 per cent liquor, (sp.h. = .935) at 130 lb. ab. pres., to 1st effect, 49,583 × 318.6 × .935	.....	14,770,330
Radiation, 2 per cent of heat supplied.....	.....	1,033,552
Excess heat to make up for other losses.....	.....	1,787,689
Totals	51,677,661	51,677,661

1ST EFFECT, HEAT BALANCE, PER HOUR

Total heat in 38,800 lb. steam from boiler at, 195 lb. ab. and with 50 deg. F., superheat, 38,800 × 1229.2 =.....	47,692,960	
Heat in 13.15 per cent liquor from 2nd effect..	14,770,330	
Heat in steam to 2nd effect.....	.....	44,180,661
Condensate, returned to boiler, at 195 lb. ab., 38,800 × 352.7 =.....	.....	13,700,000
Heat in 55 per cent liquor (sp.h. = .725) at 180 lb. ab., to furnace, 11,850 × 345.6 × .725 =.....	.....	2,969,136
Radiation, 2 per cent of heat supplied.....	.....	1,249,264
Excess heat to make up for other losses.....	.....	364,229
Totals	62,463,290	62,463,290

FURNACE AND BOILER, HEAT BALANCE, PER HOUR

In fuel, 6525 × 8000 =.....	52,200,000	.....	
In 55 per cent liquor.....	2,969,136	.....	
In condensate from 1st effect.....	13,700,000	.....	
In air for combustion.....	560,000	.....	
Stack Losses:			
Due to water in the liquor that is fired:			
Evaporating 3860 lb. 3860 × 970.4=..... 3,745,740			
Evaporating 1465 lb. (flash), 1465 × 970.4 =..... 1,421,630			
Superheating 5325 lb., 212°-500°, 5325 × 288 × .468 =..... 717,725			
Due to combustion losses in the solids, that of dry flue gas, hydrogen, moisture in air....10,196,535			
	16,081,630	.....	16,081,630	Per cent 23.2
Loss due to radiation.....	.....	1,566,000	2.2
Heat in steam, 38,800 lb. to 1st effect, 38,800 × 1229.2 =.....	.....	47,692,960	68.7
Loss in ash, 1½ per cent of heat in fuel.....	.....	783,000	1.1
Excess heat from fuel to make up for losses..	.....	3,305,546	4.8
Totals	69,429,136	69,429,136	100.0

ENTIRE PLANT, HEAT BALANCE, PER HOUR

In fuel, 8000 B.t.u./lb.....	52,200,000	.....	....
In original liquor.....	5,023,060	.....	....
In air for combustion.....	560,000	.....	....
Stack losses.....	.....	16,081,630	27.8
Radiation	.....	4,001,816	6.9
Heat in steam to digesters.....	.....	27,294,150	47.2
Loss to sewer.....	.....	4,165,000	7.2
Loss in ash.....	.....	783,000	1.4
Total excess heat.....	.....	5,457,464	9.5
Totals	57,783,060	57,783,060	100.0

ASSUMED ANALYSIS OF LIQUID FUEL, CONTAINING 55 PER CENT SOLIDS AS FIRED TO WAGNER FURNACE

	Per cent by weight	Mols per 100 lb. fuel	Mols per 100 lb. of Fuel C	H_2	S	O_2	N_2
H_2O ...	45.0	2.500	....	2.500	....	1.250	....
C	28.3	2.358	2.358	....	....	....	....
H_2	2.5	1.250	....	1.250	....	....	....
S	2.9	.091	....	....	.091	....	....
O_2	16.7	.522	....	....	....	.522	....
N_2	....	....	....	....	....	....	....
Ash	4.6	....	....	....	....	....	....
	100.0	....	2.358	3.750	.091	1.772	....

DATA
Heat in dry fuel, 8000 B.t.u.
Temperatures: Deg. F.
Flue gases, 500
Air 70
Specific heats:
Flue gases, .24
Water vapor.... .468

CALCULATED ANALYSIS OF FLUE GASES, ASSUMING CO_2 = 13.8 PER CENT

	Mols per 100 lb. of Liquid Fuel	Totals	Dry gas Totals	Dry Gas Per cent by Vol.
1 Oxygen required (theoretical)	For C = 2.358, H_2 = 1.875, S = .091	4.324	.....	....
2 Oxygen in fuel.....	.....	1.772	.....	....
3 Oxygen in required air.....	.....	2.552	.....	....
4 Excess oxygen in gases, (40.8 per cent)	.....	1.042	1.042	6.1
5 Total oxygen supplied by air	.....	3.594	.....	....
6 Total air supplied.....	.....	17.190	.....	....
7 Nitrogen in air supplied....	.....	13.596	.....	....
8 Nitrogen in fuel.....	.....	0.000	.....	....
9 Total nitrogen in gases.....	.....	13.596	13.596	79.6
10 CO_2 in gases.....	.....	2.358	2.358	13.8
11 Water vapor in gases.....	.....	3.750	.....	....
12 SO_2 in gases.....	.....	.091	.091	.5
13 Total dry gases.....	.....	.....	17.087	100.0
14 Total wet gases.....	.....	.....	20.837	....

Moisture in wet gases = 18 per cent by volume

Weights and Volumes Per Lb. of Liquid Fuel

Molecular Weight — Dry Gas		Mol per lb.	Molecular Wt.	Lbs. per lb. Fuel	Temp. F.	Molal Vol.	Cu. ft. per lb.
CO_2 = .138×44 = 6.072	Dry						
SO_2 = .005×64 = .320	Gases	.1708	30.632	5.232	500.	700.48	119.64
O_2 = .061×32 = 1.952	Water						
N_2 = .796×28 = 22.288	Vapor	.0375	18.	.675	500.	700.48	26.27
	Wet						
1. mol = 30.632	Gases	.2084	28.34	5.907	500.	700.48	145.91
	Air	.1719	28.84	4.958	70.	386.72	66.48

HEAT LOSS DUE TO COMBUSTION OF SOLIDS

	B.t.u./lb. Liq. Fuel
Heat carried away by dry gases: 5.232 × (500 — 70) × .24 =..	539.94
Loss due to hydrogen in fuel: H_2 = .025 lb. / pound of liq. fuel, then, .025 × 9 = .225 lb. H_2O; and .225 [970.4 + .468 (500 — 212)] = ...	248.67
Loss due to moisture in air: if 0.6 per cent H_2O in air, then, .006 × 4.958 = .03 lb. H_2O/lb. of liq. fuel; then, with latent heat at 70 deg. F., .03 [1052.3 + (500 — 70) × .468] =....	37.60
Combustible in fly-ash: if ⅜ per cent of 8000 × .55 B.t.u. loss, then, ⅜ per cent of 4400 =.....	16.50
	842.71
Add 2 per cent for unaccounted loss.....	16.76
Loss per lb. of 55 per cent liquid fuel.....	859.47
Or, loss per lb. of dry fuel.....	1562.68

As dry fuel amounts to 6525 pounds per hour, the total loss is, 6525 × 1562½ = 10,196,535 B.t.u. per hour, as given in heat balance.

Process Steam and Purchased Power *

By J. F. Gaskill[1]

Abstract

There is evidence of confusion in the minds of many people as to the attitude of utilities toward power business such as that of the pulp and paper industry, and others in which the use of process steam complicates the situation.

This paper has been prepared to show that by the very nature of its business, the utility is forced to a fact finding position in all cases. The attitude and the approach of the author's company is outlined.

The question to be discussed is certainly of peculiar importance to the pulp and paper industry, and that name might properly have been repeated many times in this paper. You will notice that this repetition does not occur and I hope you will understand that it has been omitted in the interest of clarity and brevity because all of the statements apply equally well to several other industries and the discussion is, therefore, specific only in so far as it is confined to plants in which steam can be expanded through a power generating system and then utilized in process work.

Many are prone to think that power is the major factor in industrial processes. In most analytical discussions of industry by rapid-fire theoretical economists a large amount of verbiage is expended on kilowatt-hours per man, man-hours and the total cost of power. Strangely enough, however, we hear little about B.t.u. per man in industry or the cost of power per unit of product on the shipping floor. Perhaps this is due to the fact that the experience of a very large number of these analysts has been confined to the cloistered halls of learning and superficial observation. I hesitate to suggest that their conclusions have been influenced by the propaganda of interested parties or by the wish to cater to the almost irresistible desire of human beings to believe what they want to believe.

As an illustration of this human tendency to translate wishes into conviction I can remember when some over enthusiastic proponents of electric heating estimated, for the Philadelphia territory, that the potential electric heating load was twice the motor load. This illustrates the magnitude of the heating load, which on such a basis would be in the order of 750,000 kw. of demand. At this point I hasten to add that, while I am willing to accept the magnitude of the load, we do not smack our lips over the prospect of attaching any very large proportion of it to our electric distribution system. Some of this heating should be done by electricity, a much larger proportion by gas and oil and the remainder by other sources of heat.

I say, "should be done," advisedly because all these services if they are to be performed on a basis of reasonable stability must be set up on a foundation of overall economy.

Presumably we will all agree on this premise and, if so, the problem on the face of it should be extremely simple. I know some men who would be prone to rise and leave in the belief that the subject had been exhausted.

Human Factors

However, it has been our experience that the real difficulties begin after such an agreement is reached.

In the first place economy does not mean the same thing to all men, and from one extreme to the other all the individuals holding ideas on the subject are ready to battle for the existence of their brain child. In the second place there is the large and growing group of individuals who believe what they want to believe and who would rather have some one else make a costly mistake than admit their own error.

In the third place we have those whose position on any given subject is determined by every possible combination of human emotion that can be excited by the efforts of the other groups.

It is because of the complexity of this human side of the problem that we see on all sides of us power plants equipped seemingly in defiance of sane engineering and without proper consideration of expense. The best definition of an engineer that I ever heard says that "an engineer is a man who can do for two dollars what anyone can do for five dollars." Many men possess this ability and would exercise it if their judgment were not confused by high pressure salesmanship, the propaganda of interested parties, and the almost boy-like desire of some owners to possess the mysterious shiny gadgets that are so fascinating to watch as they work. One plant owner whom I know ran his plant at a loss for several years and, even after he had discontinued its use, refused to dismantle it. It is a sober unexaggerated fact that he made a daily visit to the silent engine room in somewhat the same spirit that you and I would inspect the grave yard of our departed hopes.

So long as we have power plants for sale at a commission and profit on one side and industrial plant owners on the other we cannot expect to have the result represent anything but a combination of human desires no matter how beautifully it may be disguised in an engineering setting. Under these conditions, only those plants which can afford the best consulting service can hope to obtain an approximately correct answer to their problem.

The utility can make a very real contribution to this situation. I do not believe that any utility man who has

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Contribution of TAPPI Heat and Power Committee.

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been closely in touch with industry can fail to agree that the sale of service should be based on economy.

Now this attitude on the part of utility men is not an indication of sprouting wings or the advent of the millennium. I am inclined to think that it is due to some vividly unpleasant experiences in the dim past. Something like the small boy and the hot stove.

Experience has shown us that the customer who discovers that he is paying us for something that he can get more satisfactory in another way, becomes a very difficult and expensive person to live with.

This very illuminating fact naturally results in something different from the usual commercial attitude toward new business. Instead of continually driving for simply more industrial business the utility must of necessity drive for more industrial business on a sound economic basis. We believe you will recognize the profound effect that qualification must have on our attitude toward sales.

Just as soon as this essential fact is realized the utility becomes primarily interested in establishing the truth as to the value of its service as opposed to the various types and degrees of competition encountered within its market.

I am not so optimistic as to believe that the human race has evolved to a point where it can entirely eliminate the fiction from its portion of truth. Personal interest will always distort the picture. I do believe, however, that whenever we can inject a human factor into a situation in which personal interest pushes that factor toward the truth we can expect a higher percentage of truth in the result. I know that the utility is a factor of that kind even though some of them may not have realized it as yet. All of them will accept the fact in time as every mistake brought about by refusal to accept it is an automatic spanking machine which will ultimately appeal to personal interest.

If we assume that this machine has performed its functions satisfactorily in our case, perhaps you will have a clearer understanding of our method of approach to the problem itself.

After ten years of testing and analysis covering all kinds of loads we have come to the conclusion that, with the exception of certain commercial loads and industrial loads of restricted process steam usage, the problem is usually individual in character. Each plant is a distinct problem in itself although much help is obtained by comparison with previous studies of a similar character and by using the plant records to expose any wide errors which may have crept into the analysis.

Plant Owners Alternatives

There are, obviously, only three things that can be done by the plant owner: (1) He can make his own steam and power, (2) he can purchase his power and make his steam and (3) he can install a plant to operate in parallel with the utility.

In considering these alternatives the first thought which must strike anyone is that the differentials between any two of these methods of operation must necessarily be small in magnitude as compared to the total expense of either. You will understand, of course, that, in making this statement, I have in mind utility rates comparable to those of our own company.

Does it not seem astonishing, in the face of this fact, that industry has so often based its decision as to method on rather broad and casual assumptions of fundamental conditions? I am sure that many of you have seen engineering reports based upon plant records of steam and kilowatt-hours generated and upon manufacturers' test guarantees of prime movers and boilers.

I am not attempting to minimize the value or accuracy of such records and tests but I do say that they are inadequate in determining the correct answer to the problem.

Test block conditions are not possible day in and day out. Twenty-four hour boiler tests with all factors specified do not tell the story of ordinary operation. These things are interesting in that they show what can be done under ideal conditions of operating and loading. They also enable us to see the progress in the art by comparing the results with those obtained under the same conditions with other and earlier equipment. They tell us little about the actual performance under the variable loads and conditions of actual productive operation.

The steam and kilowatt-hours generated by months, weeks or days are valuable for checking to expose wide errors in analyses but of themselves may be grossly misleading; the degree of error being inversely proportional to the length of time over which the record is totalized. I can distinctly remember the astonishment on the face of a certain interested person when he was convinced that, while the total steam required for a certain process in a month indicated that the required power was a by-product, the hour-by-hour variation in power prevented the use of more than twenty-five per cent of the power steam in process. This was a small plant in a special field. I would not have you think that I am attempting to apply such a percentage of variation to your industry. I do believe however that a variation of this kind exists in your industry and in all industries in which an attempt is made to balance power and process steam requirements.

Investment Factors

This line of thought can be projected into all the phases of isolated plant operation. The more the situation is studied the more apparent it becomes that careful and painstaking analysis of detailed facts of operation obtained by continuous tests over a considerable interval of time is necessary even to approximate the truth as to the balance between power and steam usage.

Investment charges, labor and fuel costs, maintenance, insurance and taxes and miscellaneous expenses also require careful analysis in the light of past experience and reasonable future trends.

No man wishes to invest his money in a power plant unless he can be reasonably sure that it will not only earn an adequate income but also return to him the principal in a reasonable length of time. We believe that as a general rule this length of time will be determined by the risk involved, and the return will be determined by the value of the capital used in some other way.

Any improvement in the art which makes the equipment obsolete, any change in production methods which upsets the original calculations, any reduction in central station rates which wipes out or lowers the return on the investment are important considerations in dealing with the risk to capital involved in power plant investment.

The value of the capital in the production end of the business either present or future for extensions and improvements or protection in times of poor business should be considered when analyzing adequate return.

It seems to me that the study of this problem must aim to establish an annual overall cost which will insure that, as the uncontrollable variables affect the situation, the errors will be of a compensating nature or such as to improve the return indicated by the report over the period selected to amortize the investment. Certainly this is one

of the problems in which a deficit should be unthinkable from the start.

If you will consider just the variables we have mentioned: (1) The balance between power and steam loads, (2) The performance of equipment, (3) The risk to capital and (4) The cost of fuel, labor, etc., you can readily see that inadequate detailed analysis in each case tends to result in low estimates which are unsafe to project over reasonable amortization periods. I believe that safety is more important than hope where investment is involved and I also believe that many will agree on this point today who would have disagreed four years ago.

Because of the fact that the study of power plant operation developed at a time when the comparison was between similar kinds of equipment it was not necessary to go to very great lengths in determining conditions. The same variables affected both sides of the equation in very much the same degree. This is no longer true.

With the advent of central station service the comparison immediately has on one side the individual plant with all the variables upon which we have so briefly touched and upon the other a much more simple and stable condition.

This is true for several reasons:

(1) The divorcement of steam and power supply eliminates the variables inherent in attempting to determine the balance between them.

(2) Central station rates do not fluctuate violently and have a downward tendency as determined by the trend over more than ten years.

(3) The items of labor, fuel, maintenance, supplies, etc., become a smaller percentage of the total cost thereby reducing the percentage effect of variations in these items.

(4) The investment is lower and is confined to equipment of very high efficiency which permits a longer amortization period or greater safety over the period selected to retire power plant equipment.

Owing to these facts modern studies of the power and steam problems of the pulp and paper industry should, I believe, be carried into more detail than ever before in order to be certain that the differential, no matter which way it falls, can be reasonably certain of realization.

Precise Analysis Necessary

The Philadelphia Electric Company does not believe that this can be done by observation, the consultation of plant records or by short and unrelated tests. We believe that it is necessary to determine the coal consumed and the coincident demands and consumption of steam and electricity continuously for at least a week of average operation and to analyze these results hour by hour in order to partially determine the effect of load variations on the heat balance. If seasonal factors affect the picture materially the test must be repeated to obtain those variations. When and if we are satisfied with this result the answer must be incorporated in a report which has analyzed all the other costs involved in as complete a manner as experience and operating information on similar and identical equipment will permit.

In the case of new plants where testing is impossible the analysis must be made upon the foundation of all the test and operating data which has been collected on other similar plants. This information, with the cooperation of the owner, can then be translated into the terms of his proposed operation with reasonably satisfactory conclusions, although the degree of accuracy necessarily cannot be as great as that obtained in the study of an operating plant.

It should be evident by this time that a discussion of the variables involved in the problem and their importance could be continued indefinitely. I do hope however that sufficient has been said to obtain your agreement to the thought that it becomes of paramount importance, in so far as it is humanly and economically possible, to reduce the problem to a basis of fact when we attempt to compare the extremely variable conditions of a plant designed to balance steam and power with the much more stable conditions which obtain when the steam and power are divorced under central station service.

In some fear of contradiction I am going to assume that we are in agreement and attempt to summarize the approach to the three possible solutions to the problem.

(1) If the owner wishes to decide between generation of all his power and steam requirements and generation of steam and the purchase of power the differential either way between the methods of supply is small as compared to the total cost and, therefore, requires considerable detailed factual information. This information must be based upon continuous coincident tests of both steam and electricity together with the fuel consumption over the test period. The provisions for the other factors of investment charges, labor, etc., must be so handled as to assure the safety of the solution of the problem over the amortization period.

(2) If the comparison includes the possibility of parallel operation we must dig further for more details as the differential will, obviously, be smaller.

In connection with this method of handling the problem I wish to state that evidence furnished by a customer's operating reports comparing a period of parallel operation with a period of purchased power and generated steam indicates that it will be advantageous to everyone concerned if we go even deeper into the study than we have up to this time. I suppose it is somewhat tantalizing to speak of evidence without giving it but proper respect for the automatic spanking machine leads me to turn the evidence inside out before releasing it. I make this statement merely to show that the problem may not, as yet, have been completely analyzed to the required refinement of detail.

(3) There is yet another possibility for the future which we have not discussed because it has not yet been generally offered as a utility service. In fact it may never be so incorporated unless the many complications can be resolved so that it can be made practicable both from the standpoint of the utility and the industrial. I refer to the ownership and operation of a combined steam and electric plant by a utility for the supply of both services to one or more customers.

Conclusion

In concluding I want to thank you for your kindness in giving us the opportunity to state our position on this problem. As I have said before figures would certainly be of little value to you in matters of this kind, although I could have assembled a really imposing array from the accumulation of the ten-year period during which we have been developing our present attitude. Certainly little advantage and much error would result from attempting to generalize from figures which are accurate only for the specific problem to which they apply. The important thing is surely that the approach to the problem shall be on a fact finding basis. When owners, engineers and utilities mutually realize that their personal interest is inevitably wrapped up in such an attitude, the arithmetic will take care of itself and there will be more economical installations. If anything I have said contributes to this idea the purpose of this paper has been accomplished.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 18, 1933

CIGARETTE PAPER

Champagne Paper Corp., Manhattan, Havre, 321 cs.; American Tobacco Co., Manhattan, Havre, 100 cs.

WALL PAPER

S. K. Lonegren, Drottningholm, Gothenburg, 2 cs.; F. J. Emmerich, Amer. Trader, London, 2 bls.; F. J. Emmerich, New York, Hamburg, 3 bls.

PAPER HANGINGS

W. H. S. Lloyd & Co., Amer. Trader, London 1 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Drottningholm, Gothenburg, 232 rolls; Chase National Bank, Drottningholm, Gothenburg, 44 bls.; Majestic Paper & Twine Co. Drottningholm, Gothenburg, 86 rolls; Perkins Goodwin & Co., Donau, Bremen, 64 rolls; —— Donau, Bremen, 291 rolls; Parsons & Whittemore, Inc., Donau, Bremen, 37 rolls; Perkins Goodwin & Co., Manhattan, Hamburg, 121 rolls; ——, New York, Hamburg, 22 rolls.

WRAPPING PAPER

Japan Paper Co., Drottningholm, Gothenburg, 2 bls.; Walker Goulard Plehn Co., Manhattan, Hamburg, 2,738 rolls.

PRINTING PAPER

International F'd'g Co., Black Hawk, Antwerp, 23 cs.; International F'd'g Co., New York, Hamburg, 14 cs.; Japan Paper Co., Donau, Bremen, 4 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Bremen, Bremen, 7 cs.; Rohner Gehrig & Co., Bremen, Bremen, 11 cs.; B. F. Drakenfeld & Co., Alaunia, Liverpool, 13 cs., (duplex).

TISSUE PAPER

D. F. Young, Alunia, Liverpool, 5 cs.; Moller Products Co., Alaunia, Liverpool, 1 cs.; B. F. Drakenfeld & Co., Alaunia, Liverpool, 2 cs.; Irving Trust Co., Pr. Garfield, Marseilles, 34 cs. W. J. Byrnes, Aquitania, Southampton, 1 cs.; Jay Madden Corp., New York, Hamburg, 11 bbls., 4 cs.

PHOTO PAPER

Eastman Kodak Co., Amer. Trader, London, 1 cs.; Medo Photo-Supply Co., Aquitania, Southampton, 3 cs.; Gallagher & Ascher, Donau, Bremen, 11 cs.

SURFACE COATED PAPER

Gevaert Co. of America, Black Hawk, Antwerp, 25 cs.; Rothschild Import Co., Manhattan, Hamburg, 7 cs.

METAL COATED PAPER

Globe Shipping Co., New York, Hamburg, 17 cs.; K. Pauli Co., New York, Hamburg, 11 cs.

COATED PAPER

Chas. Happel, Manhattan, Hamburg, 3 cs.; Chas. Happel, New York, Hamburg, 2 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., Amer. Trader, London, 8 cs.; R. Giese & Son, New York, Hamburg, 10 cs.

FILTER MASS

A. Giese & Son, Manhattan, Hamburg, 21 bls.

GUMMED PAPER

Heemsoth Basse & Co., Bremen, Bremen, 6 cs.

MISCELLANEOUS PAPER

Corn Exchange Bank Trust Co., Venice Maru, Kobe, 12 cs.; The Borregaard Co. Inc., Drottningholm, Gothenburg, 931 rolls, 24 bls.; Kraemer & Co., Drottningholm, Gothenburg, 117 bls.; Bush Service Corp., Manhattan, Hamburg, 2 cs.

RAGS, BAGGINGS, ETC.

E. J. Keller Co. Inc., Black Hawk, ——, 45 bls. bagging; Banco Coml Italiane Trust Co., Giulia, Trieste, 38 bls. rags; ——, Donau, Bremen, 11 bls. rags.

OLD ROPE

——, L. A. Christensen, Barcelona, 38 coils; Banco Coml Italiane Trust Co., Manhattan, Hamburg, 42 coils.

CHINA CLAY

L. A. Salomon & Bro., Alaunia, Liverpool, 140 bags.

CASEIN

D. C. Andrews & Co., New York, Hamburg, 60 bags.

GLUE STOCK

——, Donau, Bremen, 200 bags hide glue; ——, Manhattan, Hamburg, 270 bags hide glue.

WOOD PULP

Johaneson Wales & Sparre, Inc., Drottningholm, Gothenburg, 420 bls. sulphite; Johaneson Wales & Sparre, Inc., Drottningholm, Gothenburg, 400 bls. chemical pulp; E. M. Sergeant & Co., Drottningholm, Gothenburg, 897 bls. kraft soda; Chase National Bank, Drottningholm, Gothenburg, 600 bls. sulphite; ——, Donau, Bremen, 150 bls. wood pulp; Castle & Overton, Inc., New York, Hamburg, 1,570 bls. wood pulp, 314 tons.

WOOD PULP BOARDS

Johaneson Wales & Sparre, Inc., Donau, Bremen, 496 rolls; Lagerloef Trading Co., Manhattan, Hamburg, 68 bls.

BOSTON IMPORTS

WEEK ENDING MARCH 18, 1933

Atkinson Haserick & Co., Pr. Garfield, Genoa, 5 cs. paper; Elliott & Co., Black Hawk, Antwerp, 4 cs. drawing paper; E. Butterworth & Co. Inc., Black Hawk, Antwerp, 34 bls. glue stock; Castle & Overton, Inc., Black Hawk, Rotterdam, 2,013 bls. wood pulp, 338 tons; Bulkley Dunton & Co., Capulin.——, 500 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 18, 1933

Castle & Overton, Inc., L. A. Christensen, Barcelona, 93 bls. rags; Bulkley Dunton & Co., Karpfanger, ——, 1,375 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING MARCH 18, 1933

Bulkley Dunton & Co., Kelkheim, ——, 4,450 bls. wood pulp; Bulkley Dunton & Co., Karpfanger, ——, 3,500 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 18, 1933

Parsons & Whittemore, Inc., Vasaholm, ——, 488 bls. sulphite.

HOUSTON IMPORTS

WEEK ENDING MARCH 18, 1933

Banco Coml Italiane Trust Co., Giulia, Venice, 307 bls. bagging.

New Smith & Winchester Bag Machine

The Smith & Winchester Manufacturing Company, of South Windham, Conn., has recently developed a new straight line tuber for side seam flour bags having printing on all four sides. These machines operate up to 800 feet per minute and the electric eye control guarantees an even seam regardless of uneven or dished rolls. The thumb cut driven by a shaft between the frames, instead of outside, makes it easier to get at the table and set the machine. It is also possible to vary the angle of approach of the paper to the "former shoes", increasing the accuracy of the fold and reducing waste. This new machine can be used for duplex as well as single tubes and produce bags from 9 to 44 inches long and from 5⅓ to 15 inches wide.

This concern has also issued a new bulletin titled "Carrying the Torch" which ties up their early history in the pioneering, developing and building of paper machinery. They built the first complete Fourdrinier paper machine and have the original patents and drawings for the first Jordan engines which were built by them. Their new bulletin fully describes the various types of paper making equipment they build, with a historical background for each which gives added interest to the story they tell. Both of these bulletins may be obtained by mere request addressed to their home office.

New Ross Engineering Bulletin

The J. O. Ross Engineering Corporation has just issued a bulletin describing their new Conditioning Unit for paper testing rooms. In view of the wide and vastly developed interest within the past few years in paper testing equipment, this bulletin should be of real value for everyone engaged in the production of paper.

Lithographic Papers Sensitive to Humidity

Papers used in lithographic printing change in size rapidly with changes in moisture content of the surrounding air, according to results obtained in laboratory studies now in progress at the paper section of the Bureau of Standards. Need of more careful humidity control for press-room air than was heretofore believed necessary is indicated if register difficulties arising from contraction and expansion of the paper are to be avoided.

Lithographic paper is so sensitive to relative humidity that the moisture content changes instantly as the moisture condition of surrounding air varies. All changes in the moisture content of the paper result in dimension changes of great importance in printing requiring precisely registered impressions. In order to determine the importance of such changes, the Bureau is studying 15 different papers in a room where "manufactured weather" permits the control of relative humidity to 1 per cent and temperature to 1 deg. F. Large sheets of the papers were exposed to successive relative humidities ranging from 28 per cent to 72½ per cent, and the dimensions were carefully measured at each humidity to an accuracy of .001 inch by means of a special micrometer rule.

Dimension changes amounting to .005 inch or more in 50 inches, sufficient to cause serious difficulties in obtaining close register, were found to result from relative humidity changes of only 4 per cent, these being no greater than variation commonly tolerated in plants having controlled atmosphere. Furthermore, it was found that differences in dimensions resulting from bringing paper to balance with a fixed atmospheric humidity from different directions, that is, bringing the moisture content of a dry paper up or of a moist paper down to balance with the fixed condition, were important. Such differences in dimensions obtained by approaching a humidity from opposite directions were as great as differences caused by 10 per cent relative humidity variations.

The results are of significance not only to the lithographer, but to the paper manufacturer and to the manufacturer of air conditioning apparatus. Need for increased accuracy in control of atmosphere in printing plants appears to require the concerted attention of lithographers and air conditioning equipment manufacturers in order to minimize waste resulting from distortion of the printing paper. The paper manufacturer can assist by furnishing paper with uniform moisture content nearly in balance with the standard humidity condition maintained in the printing plant.

American Paper Goods Co. Files Good Report

HARTFORD, Conn., March 20, 1933.—The financial condition of the American Paper Goods company continues to be excellent despite the fact that the surplus of the company declined from $646,568.43 to $576,855.34 during the past year, according to a statement issued to stockholders by President W. S. Bacon.

During 1932 the company had to contend with a materially decreased volume of business, increased taxation, a diminishing profit margin and a continually falling paper market, the statement said.

Otsego Wax Paper Co. Files Petition

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., March 18, 1933.—The Otsego Wax Paper Company, of Otsego, Allegan County, has filed a petition in bankruptcy with the United States district court in Grand Rapids. Liabilities listed were $146,655, and assets $145,261.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 22, 1933.

Sentiment continues to improve in the local paper market. Demand for the various grades of paper is more active and prices are steadier than for some time past. Slight advances on one or two grades have been reported, in some instances. Sales forces of the leading paper organizations are becoming optimistic and the future outlook is brighter.

Consumption of news print paper continues low. There is a possibility of a revival of advertising, however, in the near future. Production in the United States, Canada and Newfoundland is being maintained in sufficient volume to take care of current requirements. The price situation continues unchanged.

The paper board market continues steady. Box board manufacturers are still maintaining operations at about 55 per cent of capacity. Prices are holding up well. The fine paper market is exhibiting a strong undertone. Sulphite bond prices are firmer. Some improvement developed in the coarse paper market and there is an expectation of a slight rise in kraft wrapping paper quotations.

Mechanical Pulp

The ground wood pulp market is marking time. The industry continues in a sound statistical position, with production curtailed in this country and abroad and offerings limited. While the prevailing demand is restricted, there are some inquiries around for future account. Prices are generally holding to schedule.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Now that the banking holiday has ended trading is becoming more active and demand for the various domestic and imported grades is fairly persistent. The contract movement, also, is improving. Prices are generally holding to previously quoted levels and shading is infrequent.

Old Rope and Bagging

The old rope market is displaying a stronger undertone. Demand for both domestic and foreign old manila rope is slightly better. Small mixed rope is moving in fair volume. Old rope prices are firmer. The bagging market is more lively, with scrap and gunny bagging moving more freely. Roofing bagging is steady.

Rags

Conditions in the domestic rag market are fairly satisfactory. The paper mills are displaying more interest in several of the grades of cotton rags. No. 1 white shirt cuttings are displaying greater strength. Roofing grades are going forward in better volume than of late. No radical changes have been reported in the imported rag situation.

Waste Paper

Board mill demand for the lower grades of paper stock is well maintained. Offerings are rather scarce, especially of strictly folded news and No. 1 mixed paper, and prices continue firm. Demand for the better grades of waste paper is normal. Hard white shavings are steady. Book stock is arousing more interest than of late.

Twine

With the approach of Easter and increased demand for wrapping paper the immediate outlook for the local twine market is fairly bright. There are a number of inquiries around for future account, some of which should materialize into good orders. Despite the usual keen competition, the price situation is improving.

Mutual Benefit Officers Elected

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., March 20, 1933—A meeting of the mutual benefit organization connected with the local branch of the International Paper Company was held this week at which the following officers were chosen: Thomas Colvin, president; Newton Ives, first vice-president; Paul Robert, second vice-president; James Rourke, treasurer, and Alfred Del Signore, secretary. A committee to supervise the various committees will be composed of Leo Terrio, Mark Hanley, George A. Roberts, Fred Wheeler, Richard Lane and Myron Palmer.

British Paper Industry More Hopeful

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 22, 1933—Commercial Attache William L. Cooper in London reports that the British paper industry sees hopeful signs as compared with preceding months. Employment remains fairly steady, while exports have shown considerable increase in volume.

The report states that demand for both kraft and news print have shown little change. Exports of most paper products except stationery increased in volume.

Newton Paper Co. Finance Statement

The Newton Paper Company of Holyoke, Mass., has filed the following report for the year ending Dec. 31. Assets—cash $11,385, accounts receivable from customers $22,892, notes receivable from customers $333, merchandise $37,557, supplies $2,076, real estate $161,258, machinery $314,222, motor vehicles $2,255, furniture and fixtures $2,595, prepaid insurance $1,082, treasury stock $2,726. Liabilities—accounts payable $17,310, reserve for depreciation $264,318, capital stock with par value $72,000, surplus $204,757.

Annual Report of Franklin Paper Co.

The Franklin Paper Company of Holyoke, Mass., has filed the following report of its financial condition for the year ending Dec. 31. Assets—cash $36,869, accounts receivable from customers $22,487, merchandise $83,288, securities $19,255, real estate $3,000, machinery $22,210, furniture and fixtures $940, prepaid insurances, interest and taxes $7,714. Liabilities—accounts payable $11,129, reserve for plant improvement $20,436, capital stock with par value $50,000, surplus $161,372.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 22, 1933.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk; while the powder is selling at from 3½ cents to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Demand for bleaching powder is moderately active. The contract movement is fairly satisfactory. Prices are holding to previously quoted levels. Bleaching powder is quoted at from $1.75 to $2.00 per 100 pounds, in drums, at works.

CASEIN.—The casein market is marking time. Domestic standard ground is quoted at 7 cents and finely ground at 8 cents per pound. Argentine standard ground is selling at 9 cents and finely ground at 9½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are fairly satisfactory. Prices remain unaltered. Solid caustic soda is quoted at from $2.55 to $2.60; while the flake and the ground are selling at from $2.95 to $3.00 per 100 pounds, in large drums, at works.

CHINA CLAY.—The china clay market is fairly active. Shipments against contract are going forward in seasonal volume. Imported china clay is quoted at from $10 to $15 per ton, ship side; while domestic paper making clay is selling at from $5 to $12 per ton, at mine.

CHLORINE.—Some improvement was noticed in the chlorine market. The contract movement is fairly heavy. Prices are generally holding to schedule. Chlorine is quoted at $1.75 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market fluctuated slightly. The grades of gum rosin used in the paper mills are now quoted at from $3.65 to $4.10 per 280 pounds, in barrels, at works; while wood rosin is selling at $2.75 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Paper mill demand for salt cake is fairly persistent. Prices remain unchanged. Salt cake is quoted at from $12.50 to $13.00; chrome salt cake at from $11.50 to $12.50 per ton, at works. Imported salt cake is selling at from $12.50 to $13.00 per ton, on dock.

SODA ASH.—The soda ash market continues to display a fairly strong undertone. While demand is light, prices are steady. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, 1.05; in bags, $1.30; and in barrels, $1.43.

STARCH.—Most of the business transacted in the starch market during the past week was along routine lines. Prices remain unaltered. Special paper making starch is quoted at $2.19 per 100 pounds, in bags; and at $2.46 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Business in the sulphate of alumina market is improving slightly. Prices are holding to schedule. Commercial grades are quoted at from $1.25 to $1.46; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market continues steady. Sulphur is quoted at $18 per long ton, on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—Now that the bank situation is clearing, the talc market is becoming more active. Prices are steady. Domestic talc is quoted at from $16 to $18 per ton, in bulk, at eastern mines; while imported talc is selling at from $18 to $22 per ton, ship side.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	38.00
Bonds	4.50	@	53.25
Index	6.00	@	12.00
Writings—			
Extra Superfine	6.50	@	15.00
Superfine	6.25	@	14.75
Tub sized	4.50	@	7.00
Engine sized	4.00	@	5.00
Book, Cased—			
S. & S. C.	4.25	@	5.00
M. F.	3.75	@	4.25
Coated and Enamel	5.00	@	9.00
Lithograph	5.00	@	9.00
Tissues—Per Ream—			
White No. 1	.50	@	.70
White No. 2	.45	@	.60
Anti-Tarnish M. G. only	.65	@	.70
Colored	.70	@	.90
Kraft	.65	@	.70
Manila	.55	@	.60
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	3.37½	@	—
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.00	@	3.00
Card Middles	4.00	@	5.00
Glassine—			
Bleached, basis 25 lbs., No. 1	.09¾	@	—
No. 2	.11¾	@	—
Bleached, basis 20 lbs.	.11¾	@	—

(Delivered New York)

News, per ton—			
Roll, contract	45.00	@	—
Rolls, spot	45.00	@	—
Sheets	50.00	@	—
Side Runs	30.00	@	35.00
Kraft—			
No. 1 Domestic	4.50	@	4.75
No. 2 Domestic	2.75	@	3.00
Southern	2.50	@	2.75
Imported	2.75	@	3.50
Boards—per ton—			
News	30.00	@	32.50
Straw	29.50	@	31.50
Chip	27.50	@	30.00
Binders' Boards	62.00	@	70.00
Kraft Liner	40.00	@	45.00
Standard 85 Test Jute Liner	27.75	@	30.00
Sgl. Mla. Ll. Chip	37.50	@	40.00

(F. o. b. Mill)

Wood Pulp Boards	70.00	@	80.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	18.00	@	20.00
Dry	19.00	@	21.00

(F. o. b. Mill)

No. 1 Domestic and Canadian	14.00	@	22.00

Chemical Pulp

(On Dock, Atlantic Ports)

Sulphite (Imported)—			
Bleached	1.80	@	2.25
Easy Bleaching	1.60	@	1.75
No. 1 strong unbleached	1.35	@	1.60
Mitscherlich unbleached	1.60	@	1.75
No. 2 strong unbleached	1.25	@	1.35
No. 1 Kraft	1.25	@	1.40
No. 2 Kraft	1.10	@	1.15
Sulphate—			
Bleached	1.85	@	2.15

(F. o. b. Pulp Mill)

Sulphite (Domestic and Canadian)—			
Bleached	1.75	@	3.75
Easy Bleaching	1.75	@	1.90
News	1.40	@	1.65
Mitscherlich unbleached	2.00	@	2.25
Kraft (Domestic)	1.25	@	2.75

(Delivered Paper Mills)

Soda Bleached	2.00	@	—

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	3.80	@	4.00
New White, No. 2	3.00	@	3.25
Silesias No. 1	3.25	@	4.00
New Unbleached	5.25	@	5.75
New Soft Blacks	2.75	@	3.00
Blue Overall	3.00	@	3.50
Fancy	1.25	@	1.50
Washables	1.00	@	1.25
Mixed Khaki Cuttings	2.50	@	3.00
Pink Corset Cuttings	2.75	@	3.25
O. D. Khaki Cuttings	3.00	@	3.25
Men's Corduroy	1.00	@	1.25
New Mixed Blacks	2.25	@	2.50

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.00	@	2.25
White, No. 2—			
Repacked	1.75	@	2.00
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.00	@	1.25
Black Stockings	2.00	@	2.25
Roofing Rags—			
No. 1	.53	@	.58
No. 2	.48	@	.53
No. 3	.43	@	.48
No. 4	.38	@	.43
No. 5A	.33	@	.38

Foreign Rags

New Rags

New Dark Cuttings	1.30	@	1.40
New Mixed Cuttings	1.50	@	1.60
New Light Silesias	3.00	@	3.25
Light Flannelettes	2.50	@	2.75
Unbleached Cuttings	4.50	@	5.00
New White Cuttings	4.00	@	4.25
New Light Oxfords	3.00	@	3.25
New Light Prints	1.85	@	2.25

Old Rags

No. 1 White Linens	5.25	@	5.50
No. 2 White Linens	4.50	@	4.75
No. 3 White Linens	3.25	@	3.75
No. 4 White Linens	1.75	@	2.25
No. 1 White Cotton	3.50	@	3.75
No. 2 White Cotton	2.75	@	3.25
No. 3 White Cotton	2.25	@	2.50
No. 4 White Cotton	1.40	@	1.50
Extra Light Prints	1.80	@	2.00
Ord. Light Prints	1.60	@	1.75
Med. Light Prints	1.40	@	1.55
Dutch Blue Cottons	1.35	@	1.40
French Blue Linens	1.80	@	1.90
German Blue Linens	1.70	@	1.80
German Blue Cottons	1.20	@	1.25
Checks and Blues	1.25	@	1.30
Lindsay Garments	.75	@	.80
Dark Cottons	.70	@	.75
Old Shopperies	.55	@	.60
New Shopperies	.60	@	.65
French Blues	1.25	@	1.30

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	.90	@	1.00
Domestic	1.00	@	1.10
Wool Tares, light	.70	@	.80
Wool Tares, heavy	.70	@	.80
Bright Bagging	.70	@	.75
Small Mixed Rope	.59	@	.60
Manila Rope—			
Foreign	1.35	@	1.40
Domestic	1.40	@	1.50
New Burlap Cut	1.00	@	1.50
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.00	@	2.10
Ordinary Hard White No. 1	1.70	@	1.80
Hard White No. 2	1.50	@	1.60
Soft White No. 1	1.45	@	1.55
Flat Stock—			
Stitchless	.55	@	.65
Overissue Mag	.55	@	.65
Solid Flat Book	.50	@	.55
Crumpled No. 1	.40	@	.45
Solid Book Ledger	1.50	@	1.75
Ledger Stock	.45	@	.55
New B. B. Chips	.20	@	.25
Manilas—			
New Env. Cut	1.35	@	1.45
New Cuttings	1.00	@	1.05
Extra No. 1 old	.80	@	.90
Print	.35	@	.40
Bogus Wrapper	.30	@	.35
Container	.25	@	.30
Old Kraft Machine—			
Compressed bales	.65	@	.75
News—			
No. 1 White News	1.00	@	1.05
Strictly Overissue	.50	@	.55
Strictly Folded	.40	@	.45
No. 1 Mixed Paper	.20	@	.25

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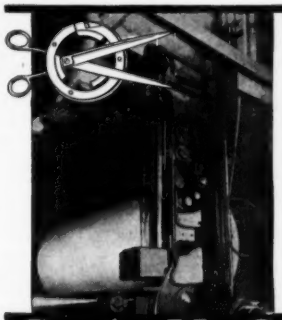

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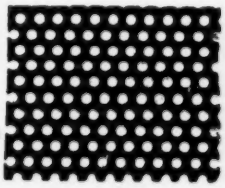

STEEL, COPPER, BRASS, BRONZE, MONEL METAL and other Alloys punched for Centrifugal and Rotary Screens, Pulp Washers, Drainer Bottoms, Filter Plates, etc.

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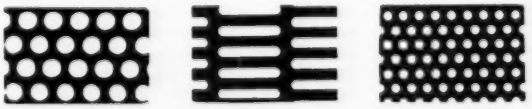

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Twines
(F. o. b. Mill)

Cotton—			
B. C., 18 basis	.30	@	.32
No. 1	.20	@	.22
No. 2	.19	@	.20
No. 3	.17	@	.18
A. Italian, 18 basis	.36	@	.37
Finisaed Jute—			
Dark, 18 basis	.18	@	.20
Light, 18 basis	.20	@	.22
Jute Wrapping, 3-6 Ply—			
No. 1	.15½	@	.16½
No. 2	.11¾	@	.12¾
Tube Rope—			
4-ply and larger	.08¼	@	.10¾
Fine Tube Rope—			
4-ply	.12¾	@	.12¾
3-ply	.13¾	@	.13¾
2-ply	.14¾	@	.14¾
Paper Makers Twine Balls	.09¾	@	.11¾
Box Twine, 2-3 ply	.11¾	@	.12¾
Jute Rope	.09	@	.10
White Hemp	.12¾	@	.15¾
Java Sisal—			
No. 1 Basis	.10	@	—
No. 2 Basis	.09	@	—
New Zealand Sisal	.10	@	—
Sisal Lath Yarn—			
No. 1	.12	@	.14
No. 2	.10	@	.12
Manila Twine	.23	@	.28

CHICAGO

Paper
(F. o. b. Mill)

Kag Bond	.30	@	.53¼
Water Marked Sulphite Bond	.09	@	.12
Sulphite Bond	.04	@	.11
Superfine Writing	.18	@	.24
No. 1 Fine Writing	.14	@	.18
No. 2 Fine Writing	.12	@	.14
No. 3 Fine Writing	.07	@	.18
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07½	@	.12
Coated Label	.07½	@	.10
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¼	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	3.50	@	4.50
Southern Kraft	2.62½	@	—
No. 2 Kraft	2.62½	@	—
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03½
Manila Tissue	.07	@	.07½
White Tissue	.07¼	@	.07½
(Delivered Central Territory)			
News, per ton—			
Rolls, contract	45.00	@	—
Sheets	50.00	@	—
Boards, per ton—			
Plain Chip	27.50	@	—
Solid News	30.00	@	—
Manila Lined Chip	37.50	@	—
Patent coated	47.50	@	—
Container Lined—			
85 Test	50.00	@	55.00
100 Test	55.00	@	60.00

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.50	@	1.55
No. 1 Hard White	1.40	@	1.45
No. 1 Soft White	1.00	@	1.10
Ledger & Writings	.55	@	.60
Solid Books	.45	@	.50
Blanks	1.00	@	1.05
Krafts	.70	@	.80
New Kraft Cuts	1.15	@	1.25
Manila Env. Cuts	1.25	@	1.30
Ex. No 1 Manila	.90	@	1.00
Print Manila	.30	@	.40
Overissue News	.45	@	.50
Old Newspapers—			
No. 1	.45	@	.50
Mixed Papers—			
No. 1	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper
(F. o. b. Mill)

Bonds	.04	@	.40
Ledgers	.06	@	.40
Writings—			
Superfine	.10	@	.18
Extra Fine	.15	@	.26
Fine	.15	@	.26
Fine, No. 2	.10	@	.25
Fine No. 3	.05½	@	.18
Book, M. F.	.04¾	@	.07
Book, S. S. & C.	.05	@	.07½
Book, Coated	.06	@	.16
Coated Lithograph	.06	@	.11
Label	.07	@	.11
No. 1 Jute Manila	.06	@	.09
Manila Sul., No. 1	.03	@	.05
Manila No. 2	.03	@	.04
No. 1 Kraft	.05¼	@	.06
No. 2 Kraft	.03¾	@	.04¼
Southern Kraft No. 1	—	@	.03¾
Southern Kraft No. 2	—	@	.02¼
Common Bogus	.03	@	.04
(Delivered Philadelphia)			
News Print Rolls	46.00	@	—
Straw Board	32.00	@	—
News Board	30.00	@	—
Chip Board	30.00	@	—
Wood Pulp Board	70.00	@	80.00
Binder Boards—			
No. 1, per ton	73.00	@	75.00
No. 2, per ton	62.00	@	65.00
Carload lots	60.00	@	65.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94
Best Tarred, 1-ply (per roll)	1.95	@	2.10
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.03½	@	.04
New White, No. 2.	.02½	@	.04
Light Silesias	.02½	@	.03
Silesias, No. 1	.03	@	.03½
Black Silesias, soft	.02½	@	.03
New Unbleached	.05	@	.05½
Washable, No. 1	.01	@	.01½
Blue Overall	.03	@	.03½
Cottons—According to grades—			
Washable, No. 2	.01	@	.02
New Blue	.01	@	.02
Fancy	.01½	@	—
New Black Soft	.02	@	.03
New Light Seconds	.01	@	.02
New Dark Seconds	1.50	@	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	@	.03½
No. 2 Mixed	.02½	@	.03
Corduroy	.02	@	.02½
New Canvas	.03½	@	.04
New Black Mixed	.02½	@	.03

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	@	3.00
Miscellaneous	1.75	@	2.00
M. G.	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	1.00	@	1.25
Repacked	1.50	@	1.75
Black Stockings (Export)	2.00	@	3.50
Roofing Stock—			
Foreign No. 1	.50	@	.75
Repacked	.70	@	.80

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	@	1.50
Domestic	1.50	@	—
Manila Rope	2.00	@	2.25
Sisal Rope	1.25	@	1.50
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	1.25	@	1.50
No. 2	.80	@	1.00
Wool Tares, heavy	2.75	@	—
Mixed Strings	1.15	@	1.25
No. 1 New Light Burlap	2.25	@	2.50
New Burlap Cuttings	2.00	@	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	1.60	@	1.70
No. 2 Hard White	1.50	@	1.60
No. 1 Soft White	1.40	@	1.45
No. 2 Soft White	1.10	@	1.15
No. 1 Mixed	.50	@	.60
No. 2 Mixed	.40	@	.50
Solid Ledger Stock	1.00	@	1.10
Writing Paper	.65	@	.70
No. 1 Books, heavy	.55	@	—
No. 2 Books, light	.40	@	—
No. 1 New Manila	1.10	@	1.15
No. 1 Old Manila	.60	@	.65
Print Manila	.40	@	.45
Container Manila	.35	@	.40
Old Kraft	.85	@	.90
Common Paper	.17½	@	.25
No. 1 Mixed Paper	.20	@	.30
Straw Board, Chip	.20	@	.30
Binders Board Chip	.20	@	.30
Corrugated Board	.35	@	.40
Overissue News	.45	@	.50
Old Newspaper	.30	@	.35

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	@	.12½
Rag Content	.12	@	.30
All Rag	.36	@	.52½
Bonds—			
Sulphite	.05½	@	.11½
Rag Content	.12	@	.30
All Rag	.36	@	.65
Writings	.06½	@	.20
Superfines	.11	@	.31
Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¾
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	—	@	.04¾
No. 2 Kraft	—	@	.02½
(F. o. b. Boston)			
Southern Kraft	.02¾	@	—
(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)			
Common Bogus	.02	@	.02¾
(Delivered New England points)			
News Print, rolls	44.50	@	—
Straw Board, rolls	.009	—	@35.00
Straw Board in Sheets, basis 35s to 70s	—	@40.00	
Filled News Board	—	@30.00	
Chip Board	27.50	@	—
Chip Board (Creasing)	27.50	@30.00	
Single Manila Lined Chip	—	@37.50	
Single White, Patent Coated News Board—Bender	45.00	@55.00	
Wood Pulp Board	70.00	@75.00	
Binder Boards	62.00	@75.00	

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Soft White	1.25	@	1.40
No. 1 Old Manila	.50	@	.60
No. 1 Mixed	.60	@	.70
No. 2 Mixed	.40	@	.50
Solid Ledger Books	1.20	@	1.40
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.60	@	.70
No. 1 Books, heavy	.55	@	.65
No. 1 Books, light	—	@	.30
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.25	@	1.30
No. 1 Old Manila	.50	@	.60
White Blank News	.85	@	.90
No. 1 Kraft	.75	@	.85
Manila	.80	@	.90
No. 1 Mixed Papers	.15	@	.17½
Print Manila	.30	@	.40
Overissue News	.35	@	.45
Old Newspapers	.30	@	.35
Box Board, Chip	.17½	@	.20
Corrugated Boxes	.25	@	.30
Screening Wrappers	.25	@	.32½

Bagging
(F. o. b. Boston)

Gunny No. 1—			
Foreign	1.00	@	—
Domestic	.62½	@	.67½
Manila Rope—			
Foreign	1.45	@	—
Domestic	—	@	1.60
Transmission Rope	1.00	@	—
Mixed Strings	.25	@	.30
Jute Rope	—	@	.75
Jute Carpet Threads	.25	@	.10
Bleachery Burlap	1.75	@	2.00
Scrap Burlap	.75	@	1.00
No. 1 Scrap Burlap	.65	@	.75
Scrap Sisal	.80	@	—
Scrap Sisal for shredding	—	@	.90
Wool Tares, heavy	.65	@	.75
New Burlap Cutting	.75	@	.90
Australian Wool Pouches	1.75	@	2.00
Heavy Baling Bagging	.90	@	1.10
Paper Mill Bagging	.30	@	.35
Bagging No. 2	.20	@	.25
No. 1 Burlap	1.75	@	2.00

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	—	@	.01¼
New White No. 1	—	@	.03½
New White No. 2	.02¾	@	.03¼
Silesias No. 1	—	@	.03
New Black Silesias	.02½	@	.02¾
New Unbleached	—	@	.04½
Fancy	—	@	.02½
Washable	—	@	.01½
Cottons—According to grades—			
Blue Overalls	—	@	.03¾
New Black, soft	.04	@	.04½
Khaki Cuttings	.03	@	.03½
O. D. Khaki	.03½	@	.03¾
Corduroy	.02¾	@	.03
New Canvas	—	@	.05
B.V.D. Cuttings	.04	@	.04¼

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	1.50	@	1.75
White No. 2—			
Repacked	.02¾	@	.02½
Miscellaneous	.02	@	.02¾
Twos and Blues	.90	@	1.00
Thirds and Blues—			
Repacked	.75	@	.85
Miscellaneous	.70	@	.75
Black Stockings	2.00	@	2.25
Roofing Stock—			
No. 1	.40	@	.45
No. 2	.35	@	.40
No. 3	.25	@	.30

Foreign Rags
(F. o. b. Boston)

Dark Cottons	.50	@	.60
New No. 1 White Shirt Cuttings	3.75	@	4.00
Dutch Blues	1.25	@	1.50
New Checks & Blues	2.25	@	2.50
Old Fustians	—	@	.75
Old Linsey Garments	.55	@	.65

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.09¾	@	—
No. 2 Sulphite	.07½	@	—
No. 1 Colored	.09¼	@	—
No. 2 Colored	.08½	@	.10½
Ledgers (sulphite)			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	@	—
No. 3 M. F. (Carloads)	5.70	@	—
No. 4 M. F. (carloads)	4.75	@	—
No. 1 S. C. (carloads)	7.15	@	—
No. 3 S. C. (carloads)	6.20	@	—
No. 4 S. C. (carloads)	5.20	@	—
No. 1 Coated and Litho	12.50	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	10.00	@	—
Coated tinted	14.00	@	—
Wrapping—			
Rag Brown	4.25	@	—
White Wrap	2.00	@	—
"B" Manila	4.75	@	—
No. 1 Manila	5.25	@	—
Fiber	5.25	@	—
Kraft, M. F.	5.75	@	—
Kraft No. 2	5.25	@	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	45.50	@	—
Sheets	50.50	@	—

Pulp
(F. o. b. Mill)

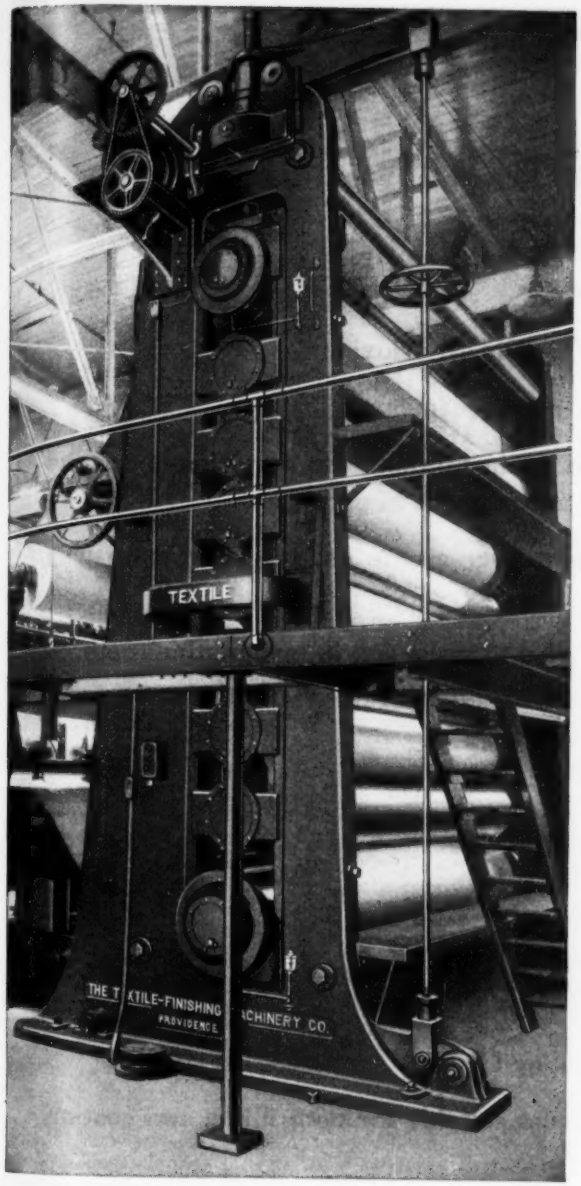
Ground Wood	18.00	@20.00	
Sulphite easy bleaching	40.00	@	—
Sulphite, news grade	38.00	@	—
Sulphite, bleached	48.00	@58.00	
Sulphate	50.00	@	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	1.80	@	—
Soft White	1.40	@	—
White Blk. News	1.25	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	—
Light and Crumpled Book Stock	.80	@	—
Ledgers and Writings	1.00	@	—
Manilas—			
New Manila Cut	1.25	@	—
Printed Manilas	.55	@	—
Kraft	1.25	@	—
News and Scrap—			
Strictly Overissue	.50	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No 1 White Shirt Cuttings	.09½	@	.10
Fancy Shirt Cuttings	.06	@	.06¼



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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

SIXTY-FIRST YEAR

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